The Use of Housing Expenditure-to-Income Ratios: Origins, Evolution and Implications

A Research Paper by

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Research on Minimum Income Criteria for the Ontario Human Rights Commission

This is one of three research papers prepared for the Ontario Human Rights Commission on the use of minimum income criteria in tenant selection in Ontario's rental housing market. This is Background Paper #2.

The main report is:

> *Discrimination in Ontario's Rental Housing Market: The Role of Minimum Income Criteria*, by J. David Hulchanski

Background Paper #1 is:

> *How Households Obtain Resources to Meet their Needs: The Shifting Mix of Cash and Non-Cash Sources*, by J. David Hulchanski and Joseph H. Michalski.

Introduction

> *"Affordability as a concept is fraught with problems of definition, measurement and consistency. There is no debate over the fact that a significant minority of Canadians have problems getting access to affordable housing that is adequate and appropriate to their needs. The real questions are: what is affordable housing, which households are really experiencing an affordability problem, how many such households are there, and what is the exact nature of the problem? It is safe to say that the discussion of affordability in Canada has been characterized by a lack of clear documentation, a misconception as to the nature of the problem and a lack of agreement as to what constitutes a real 'affordability' problem."*
>
> -- Cassie J. Doyle & J. David Hulchanski (1990:74)

In recent years "housing affordability," in contrast to the "slum problem," the "low-rent housing problem," or the "housing shortage" definitions of previous decades, has become a common way of summarising the nature of the current housing difficulty in many nations. A household is said to have a housing affordability problem, in most formulations of the term, when it pays more than a certain percentage of its income to obtain adequate and appropriate housing. This formulation of the housing problem has its roots in nineteenth century studies of household budgets and in the commonly used expression "one week's pay for one month's rent." During the early part of this century a housing expenditure-to-income ratio came into practical use by many landlords and mortgage lenders. It was assumed that a house should cost no more than two or two and a half times the salary of an average worker, which works out to be about 20% of income. Through the decades the housing expenditure-to-income "rule of thumb" deemed to be an appropriate indicator of ability to pay gradually shifted upward. In Canada the 20% rule lasted until the 1950s when somehow the 25% rule came into use, only to be replaced in the 1980s by the 30% rule (see Figure 1).

This paper focuses on the following questions. What is the origin of the use of a housing expenditure-to-income ratio? What, if any, are the theoretical and empirical foundations upon which the percentage of income "rules of thumb" are based? How did the ratio evolve? Who made use of it? Why did the ratio shift from 20% to 25% then to 30%? Who changed it? The aim is to determine how valid and reliable the housing expenditure-to-income ratio is as a measure of ability to pay for housing. That is, does such a "rule" actually measure what its users claim it is measuring?

The three parts of this paper cover: (1) the nineteenth century origins, (2) the twentieth century evolution, and (3) the contemporary implications of the use of the housing expenditure-to-income ratio. In the first part the nineteenth century roots are traced in order to identify the theoretical and empirical basis on which the widespread use of housing ratio "rules of thumb" emerged. The second part traces how the use of these "rules" about the cost of housing evolved through the first half of this century. The use of the housing expenditure-to-income ratio by four key players in the evolution of the housing system is traced. The four are: social welfare advocates, mortgage lenders, government housing analysts, and administrators determining the eligibility criteria and rent levels for government subsidized housing. Based on this history, and based on an extensive review of the contemporary housing literature -- the literature which explicitly

Figure 1

"Affordability" Assumptions Used in Canada since 1900

Housing Cost as a % of Household Income "Rules of Thumb"

Period	Rent as a % of Income
1900 to early 1920s	12%
1920s to late-1950s	20%
1960s to early 1980s	25%
since mid-1980s	30%

Source: Compiled by J.D. Hulchanski from review of housing literature.

uses housing expenditure-to-income ratios -- six distinct uses are identified and assessed in part three. The assessment is based on the extent to which each is a valid and reliable measure of what it purports to measure. The six uses are:

(1) *description* of household expenditures;
(2) *analysis* of trends and the comparison of different household types;
(3) *administration* of public housing by defining eligibility criteria and subsidy levels in rent geared-to-income housing;
(4) *definition* of housing need for public policy purposes;
(5) *prediction* of the ability of a tenant household to pay market rent; and
(6) *selection* of tenants who can afford to pay market rent.

The research method used in this paper is historical -- the identification of the origins and evolution of the use of housing expenditure "rules of thumb," based on an extensive review of the literature, past and present. The research is also based on content analysis -- an examination of how key reports, studies, government documents and housing literature have used and continue to use housing expenditure-to-income ratios. The focus is on Canada and Canadian sources, though the nineteenth century origins of the use of housing expenditure "rules of thumb" are found mainly in Europe, as part of the early history of modern social science research.

The criteria for assessing the six uses are based on the extent to which they can be considered *valid* and *reliable* measures. Valid and reliable are used here in the same way they are used in social science research methodology. *Validity* and *reliability* have very specific meanings in social science research. They are tests of the trustworthiness of the measurement instruments used in research (see for example: Babbie, 1992; Blalock, 1979; Carmines and Zeller, 1979; Neuman, 1991; and Winston, 1974). Validity is a test of the extent to which a measuring instrument adequately and accurately reflects the meaning of the concepts employed. Is the relationship being asserted, for example, what it appears to be -- is there an actual direct link between the two things? Or is there error in measurement? Reliability is a test of the consistency of a measure in yielding similar results in repeated trials.

1. Origins: The Search for "Scientific Laws" of Household Expenditure Patterns

> *"Now we must conclude that there are no fundamental general relations between income and the proportion used for rent .... In general, it appears that the relations between income and expenditure in the field of housing are so unpredictable and so varied that no absolute laws can be postulated."*
>
> -- Carle C. Zimmerman (1936:194,197)

The use of housing expenditure-to-income ratios in housing analysis has its origins in the empirical work on consumer behaviour in the mid-nineteenth century by a German statistician, Ernst Engel (1821-1896) and a number of other lesser known analysts of household budgets. Questions regarding the relationship between housing costs and household income can only arise when there is an increase in the number of wage earners, in the dependence on markets for the supply of housing and other basic needs of a household, and in the number of social scientists wondering about the economics of household expenditure patterns. Mid-nineteenth century Europe and North America provided just such a combination of these conditions.

During the second half of the eighteenth century the social sciences, including economics, separated from moral and political philosophy, in a search to discover the "scientific laws" of social and economic life. The view of the social world as one governed by transcendent religious laws was abandoned for the ideal of an objective knowledge of social and economic phenomena gained through the discovery and study of the "laws" that regulate human behaviour. The emerging social sciences used the theoretical reasoning and research methods of the natural sciences, on the assumption that the social world could be objectively known in the same way as the natural world could be known. The task was to infer from observation of social activity laws of motion for society similar to those of physics, chemistry and astronomy. It was assumed that if

natural scientists could discover the laws of nature so as to control and harness natural phenomena, then *social* scientists should be able to discover the laws governing social behaviour so as to control and regulate aspects of society. The aim was to develop "a quantitatively based science that might guide any government in improving the material well-being of its subjects" (Olson, 1993:193). Indeed, the urban social unrest in the early industrializing and urbanizing nations of Europe helped give special status to those who sought such laws.

Contemporary housing literature rarely situates itself in this broader historic context. The way in which social and economic "science" evolved affects some fundamental assumptions upon which current housing analysis is based. The source of a number of key assumptions found in contemporary housing theory and practice can be traced to past researchers and their approaches. In the case of the origins of the housing expenditure-to-income "rules of thumb," the credit is generally attributed to both Ernst Engel and Herman Schwabe, two German statisticians who formulated the early and very widely known "laws" about the relationship between income and categories of household expenditures (Reid, 1962; Lane, 1977; Feins & Lane, 1981).

In his 1977 study of the use of the housing expenditure "rules of thumb" for the U.S Department Housing and Urban Development, Lane (1977:5-6) stated that Ernst Engel "proposed an 'economic law' which included the proposition that the percentage of income that households spend for lodging and fuel is invariably the same what ever the income." In contrast Herman Schwabe "suggested that, as total family income rises, the amount allocated to housing increases at a lower rate." Lane implied that even though Engel was wrong and Schwabe was right, the contemporary use of the 25% or 30% "rule of thumb" defining affordability is closer to Engel's position. To add to the confusion, Margaret Reid, in her 1962 book *Housing and Income*, a work quoted by many contemporary neo-classical economists who write about the elasticity of housing demand, found "very substantial evidence" for the "rejection of the Schwabe law on rent," even though, Reid noted, the Schwabe law "has long been accepted and many predictions and policies have been formulated with such expectation." To further add to the confusion over which "law" was *the* "law," economist George Stigler (1954:99) noted that towards the end of his career (in 1895) Engel recognized, based on further empirical evidence, that

his earlier formulation of the housing part of his (Engel's) "law" was indeed wrong. To make sense of this we need to take a closer look at Engel's and the other "laws."

1.1 Ernst Engel's "Law" and the Early Study of Household Budgets

In his capacity as director of the Prussian statistical bureau in Berlin from 1860 to 1882, Ernst Engel did much to further the quality of state statistical data collection. He was a voluminous writer, the author of several books and numerous statistical papers. His interest in the family led him to conduct household surveys, collecting expenditure data to examine the relationship between household income and expenditure patterns. Housing was never a focus of his work. It was, rather, part of his broad interest in the entire household budget. His research led to what is known as Engel's law and the Engel curve. These are still often mentioned in contemporary economics texts. One dictionary of economics (Pearce, 1992:127), for example, defines Engel's law as:

> "An empirical 'law' of consumption.... The idea that the proportion of a nation's income spent on food is a good index of its welfare. The lower the proportion, the higher the welfare."

Today Engel's curve is better known than his law because it is the origin of the modern demand curve. The Engel curve is defined as:

> "A line which plots the relationship between an individual's income and his consumption of a specified good.... The slope of the curve at any point is the individual's marginal propensity to consume the good and indicates the ratio of change in consumption to change in income.... The ratio of the marginal propensity to consume is the income elasticity of demand for the good." (Pearce, 1992:127)

Engel was neither a theorist nor a researcher systematically testing hypotheses. Like most of the early social scientists he was a collector and analyst of quantitative data who sought to derive meaningful regularities from seemingly arbitrary observations. In the early days of modern social science this was called political arithmetic and

subsequently political economy. Its focus on aggregated data and statistical averages made it difficult to deal with individual differences. The aim was to discover quantifiable regularities in aggregate behaviours, which were eventually called statistical "laws" (Olson, 1993:62-65). It is in the collection and study of household expenditures in the second half of the nineteenth century that the roots of the more systematic study of household budgets are found. During much of the twentieth century the study of household budgets has been a widely used tool in the social services for estimating need among lower income households. It is also part of the origins of the modern cost-of-living index (Allen and Bowley, 1935: Zimmerman, 1936; Stigler, 1954; Houthakker, 1957).

Starting in the late seventeenth century, in the industrializing market economies of Europe and North America, there was a great deal of interest in the differences in the consumption patterns of poor and rich families, though little systematic quantitative analysis was carried out until the time of Engel and his contemporaries (Stigler, 1954:95). The wave of unrest in the 1840s, the rise of socialism, and the revolutions that swept Europe in 1848, gave impetus to budget studies of the poor and the rich. "Because of the widespread sense of crisis," Olson noted in his history of the emergence of the social sciences, virtually all intellectuals from the mid-seventeenth century on "were obsessed with restoring or creating foundations for social, economic, religious, and/or conceptual order in the face of perceived anarchic and chaotic tendencies" (Olson, 1993:7). One of Engel's early government appointments was to the 1848 royal commission which studied the relations between business and labour following the 1848 revolution in Saxony. Another impetus for the study of household budgets was the growing popularity of statistical analysis of social data.

Engel's approach to the empirical study of consumption was influenced by the French engineer Frédéric Le Play (1806-1882) who, after twenty years' study of European working class families, published the budgets of thirty-six in a monumental work, *Les ouvriers européens* (Paris 1855). Ernst Engel had been Le Play's student in Paris. Le Play is considered the most influential pioneer contributor to family budget studies. He was interested in theories of social control and social change and, due to his need to establish criteria for selecting families for his budget studies, was a pioneer in the statistical technique that later led to sampling. Le Play sought to counter the arguments

of the socialists by demonstrating that workers' families secured their livelihood from a variety of sources (e.g., home industries, such as owning a cow instead of buying milk). Instead of abolishing private property, he argued, property ownership should be diffused and employers should encourage and assist workers in securing home ownership as a visible symbol of family stability (Pitts, 1968:86).

Another influence on Engel was the famous Belgian statistician Adolphe Quételet (1796-1874) who believed that human characteristics, at least on average, were governed by laws as definite as those which govern physical phenomena (Houthakker, 1957:432:433). His conceptualization of social reality was dominated by his notion of the *average man* -- a notion that is an important part in understanding the contemporary use of the housing expenditure-to-income ratio which is, of course, an average. It assumes something about everyone, based on an average -- which was the mode of analysis used by Quételet. He sought to contribute to a better understanding of "moral statistics" (early sociology) by arguing that social phenomena in general are extremely regular and that the empirical regularities of human behaviour can be discovered from statistical studies and the computation of averages. Quételet considered the averages gained from his statistics to be 'of the order of physical facts,' thus establishing the link between physical laws and social laws (Landau and Lazarsfeld, 1968:250).

Quételet was the chief exponent of the application of statistical techniques to social data. He spent much of his intellectual life developing the application of such mathematical techniques as probability theory. Large census data bases were increasingly available but largely unused due to a lack of knowledge of how to make sense of such large data sets. The social turbulence and rebellion engulfing Europe focused Quételet's interest on ways to utilize social science knowledge in order to help authorities better control social change. He developed techniques of descriptive statistics in order to analyze social phenomena (e.g., examine crime data to determine who, by age, gender, social and economic status, was likely to be a criminal) (Lazarsfeld, 1961, Kendall, 1968; Lindsey, 1980). According to Quételet in 1831, using a systematic method to average massive amounts of data about human behaviour would lead to the discovery of laws akin to those discovered in the natural sciences.

> "It seems to me that that which relates to the human species, considered en masse, is of the order of physical facts; the greater the number of individuals, the more the influence of the individual will is effaced, being replaced by the series of general facts that depend on the general causes according to which society exists and maintains itself. These are the causes we seek to grasp, and when we do know them, we shall be able to ascertain their effects in social matters, just as we ascertain effects from causes in the physical sciences." (quoted by Landau and Lazarsfeld, 1968:250).

Quételet's contribution, which has a parallel usage in the late twentieth century assumptions about *average* percent-of-income "rules of thumb," was the notion that the statistical average represents a valid and reliable scientific account of particular aspects of human social reality. Quételet's contemporaries focused their attention primarily on the concept of the "average man" and the proposition that social phenomena reproduce themselves with extreme regularity. These notions were subject to the most vigorous and widespread debate among nineteenth century statisticians, philosophers and social scientists. Most argued, as does modern social science, that Quételet was wrong. One of Quételet's contemporaries critiqued his work by arguing from a mathematical analogy: just as the averages of the sides of many right triangles do not form a right triangle, so the averages of physical traits would certainly not be compatible. Combining them would not produce a "type for human beauty" as Quételet would claim, but a monstrosity (Landau and Lazarsfeld, 1968:254). While an "average" is an important summary measure of the central tendency of a distribution, modern statistics recognizes that a strict adherence to only one measure (i.e., an average) can dramatically distort the representation of the distribution found in a data set (Healey, 1993; Robson, 1993). The "average" has the unfortunate property of homogenizing the population by eliminating dispersion or variation. Measures of variability provide the crucial information in regard to the *spread* of a distribution, while averages and other measures of central tendency focus on the *centre* of that distribution.

Even though Quételet's concept of the "average man" was not taken seriously he contributed to the trend at that time of seeking social "laws." He used the word "law" to refer to a trend in a series of specific empirical findings, as an empirical generalization, and as an assertion that a certain type of human regularity exists (Landau and Lazarsfeld,

1968:253). His contemporaries were all seeking such "laws," and foremost among them in relation to statistical studies of family budgets was Engel.

From a survey of Belgian working class families in 1857, Quételet's student Ernst Engel was the first to demonstrate systematic relationships between income and categories of household expenditures. This 1857 study was one of the best known statistical analyses of budgets for many decades and the first to draw empirical generalizations from budget data (Allen and Bowley, 1935; Stigler, 1954; Houthakker, 1957). On the basis of this study, and of work by Le Play, Engel proposed a law of consumption: "The poorer a family, the greater the proportion of total expenditure that must be devoted to the provision of food" (Stigler, 1954). It is the graphical presentation of this data that became know as the Engel curve, though it is believed that Engel himself never drew such a curve (Blaug, 1992:568). Although his 1857 study was focused on food and the population problem, Engel's Law is more general, including all major expenditure categories. The more general "law" attributed to Engel states that as income increases, the proportions of expenditures on different budget items change and the proportions devoted to the more urgent needs (such as food) decrease while those devoted to luxuries and semi-luxuries increase (Allen and Bowley, 1935:7).

Engel's significance during his time was not only his search for empirical regularities in household expenditures but in the implications of his "law" as it relates to food, the commodity in which he was primarily interested. Contrary to Malthus, he found no reason to fear population growth, finding that as economic development proceeds, the cost of food becomes an increasingly smaller per cent of household budgets. The absolute size of the population was not important. Engel argued that an optimal social structure required that the distribution of workers among industries be proportional to the distribution of consumer expenditures (Stigler,1954:98). This led to his correct prediction that agriculture will decline in terms of its share of aggregate production even though the population will increase dramatically. His "laws" about food were stated as follows:

> The proportion of the outgo used for food, other things being equal, is the best measure of the material standard of living of a population.

> The poorer an individual, a family, or a people, the greater must be the percentage of the income necessary for the maintenance of physical sustenance, and again of this a greater portion must be allowed for food. (Zimmerman, 1936:39-40)

Engel not only sought valid "laws" of consumption such as these but also sought to propose measures of social progress. He held, for example, that the percentage used to buy food provided "an accurate and truthful measure of the material well-being of a people" (Zimmerman, 1936:39). The less spent on food, the greater the social progress being made. It is in this frame of analysis that the various "rules of thumb" originate -- attempts to make sweeping but valid generalizations about other important aspects of household consumption patterns as well as human behaviour in general.

Engel's work is considered to be the foundation of one branch of modern econometrics, the study of household consumption patterns on a statistical basis, as well as the first empirical contribution to the study of a demand curve (Houthakker, 1957). As a result, in the 1930's economists began to draw on the findings from the analysis of budget data to help develop their theories about demand in the marketplace and about the influence of income level on the proportions of income devoted to different items of the budget. In the 1935, for example, two professors at the London School of Economics, R.G.D. Allen and A.L. Bowley, began their book *Family Expenditure: A Study of its Variation*, with the following paragraph:

> "The purposes of this study are to discover how far the expenditure of individual families, or groups of families, can be described by rules and formulae, to relate any rules that are found to the postulates of economic theory and to describe the variations from the averages that result from the different choices of individual families." (Allen and Bowley, 1935:1)

Their book was based on the examination of collections of budgets of family expenditures, as an attempt "to discover, from records of expenditure, whether individuals do in fact behave in similar ways when prices or incomes change" so as "to throw light on the homogeneity of the group in respect of the complex of desires" (Allen and Bowley, 1935:1-2). This represented the leap from the descriptive activities of Engel and his contemporaries and their bold assertions of "laws," to theory building and theory testing.

Much of this started with Engel's work. Allen and Bowley (1935:5-9), for example, began their first chapter with a section entitled "Engel's Laws" and Zimmerman's 1936 text, *Consumption and Standards of Living*, discussed in detail the "Engelian hypotheses" in the chapter on "Laws of Consumption" (Zimmerman, 1936:33-55).

1.2 Housing Expenditures: A Special Problem for "Law" Making

The problem with the work of Engel and some of his followers is that the relationships that were identified and the predictions that were made were peculiar to food. In retrospect, we can see that they were easy relationships to identify -- that is, easy with regard to food but more difficult in the case of a much more complex budget category such as housing. Attempts to demonstrate similar laws for other categories of expenditure, especially for housing, therefore, met with much less success. This was due to the inadequacies of the available data and the yet underdeveloped statistical techniques and theoretical assumptions being used. Housing presented, and continues to present, however, numerous conceptual and practical difficulties.

An American government statistician who utilized and further popularized Engel's Law in North America was Carroll D. Wright of the Massachusetts Bureau of Statistics of Labor. In his annual report in 1875 Wright used his own data and expanded upon Engel's findings, restating them as four interrelated propositions (with the third related to housing).

1. That the greater the income, the smaller the relative percentage of outlay for subsistence.
2. That the percentage of outlay for clothing is approximately the same, whatever the income.
3. That the percentage of outlay for lodging, or rent, and for fuel and light, is invariably the same, whatever the income.
4. That as the income increases in amount, the percentage of outlay for 'sundries' becomes greater (Zimmerman, 1936:40)

Though Engel never listed his propositions in this fashion he was pleased with Wright's work and boldly proclaimed that the "confirmation [of Engel's law] is complete" (Stigler, 1954:99). Stigler's examination of Wright's work led him to describe it as an "excessively free translation of Engel's law" since only the first proposition was actually Engel's, though the rest flowed from Engel's work. There was the added "comedy," Stigler noted, in that Wright actually disagreed with Engel. Wright accepted the first and fourth "laws" but not the second and third. According to Wright: "As regards fuel, the law is quite generally verified; but its propositions as regards clothing and rents are plainly disproved" (Stigler, 1954:99).

The main point here, regarding housing, is that Engel was indeed wrong on housing, as Wright stated in 1875. In 1868 Schwabe published the first detailed research on the housing part of the household budget, proposing a "law" related explicitly to housing. In his study of wage and rent data he found that for each income group the percentage of income spent on rent declined as income rose. His "law" stated: "The poorer anyone is, the greater the amount relative to his income that he must spend for housing" (Stigler, 1954:100).

After Schwabe produced his housing "law," the subject of housing expenditure patterns continued to be the focus of much debate among household budget analysts. Housing presents enormous conceptual, theoretical and practical problems. What should be included in "housing" costs: cash rent, some or all utilities, maintenance, furnishings? What is meant by "income": gross or net, one or all adults' income, children's income if any? What about sharp temporary fluctuations in income and non-cash sources of goods and services which would otherwise have required expenditure of cash income? What about income from roomers, if any? In addition to the primitive nature of the statistical methods, there was little if any standardization in definitions. As a result, numerous other laws of consumption related to housing flourished from a growing number of academics and government officials based on each of their own particular definitions and analyses of additional sets of budget data. Zimmerman (1936) listed 36 different laws or theories about the relationship of household expenditure and specific budget categories, many related to housing with eight specifically focused on housing. The six examples below provide an indication of the nature of the evolution of the analysis of housing consumption patterns.

Schwabe	The lower the income, the higher is the proportion of rent, and *vice versa.* Rent is principally determined by income and not social class.
Laspeyres	The lower the income, the higher is the proportion of rent within any given social class, and *vice versa.*
Albrecht	Rentals of the upper economic classes follow Laspeyres' law, rentals of the middle economic classes follow Schwabe's law, and rentals of the lower economic classes follow no law. Social class, as well as income, is a factor.
Lütge	The expenditures for housing (rent, heat, light, upkeep, and furnishings) depend on social rank. The higher the social standing, the higher are the relative expenditures for housing. Schwabe's law is valid for country and city laborers, is less valid for salaried employees, and is false for officials.
Zimmerman	Not only do the expenditures of the lower class families indicate a greater nearness to physiological requirements but their houses are organized so that more of the space is devoted to eating, sleeping, and the physical needs of the individual.
Halbwachs	Laborers spend less per unit for rent than employees and officials in the same income class (Zimmerman, 1936:52-53).

It fair to conclude, as Stigler did in his 1954 review of this "scientific" work, that none of this constituted a solid contribution to either theoretical or empirical understanding of consumer behaviour. Rather, this history of attempts to study household consumption is largely a comedy of errors, all kinds of errors -- conceptual, theoretical, empirical and methodological -- in all kinds of combinations and permutations. Zimmerman referred to all of this as "fog which shrouds theories of the relation between rent and the standard of living." There was, he wrote sarcastically, "a series of so-called budgetary laws of rent such as the one by Schwabe, the rent law erroneously attributed to Engel, the revised rent law developed by the critics of the spurious law of Engel, and the several other alternative theories ..." (1936:180). By the 1930s the attempt to define "laws" of housing consumption had run out of steam. Zimmerman's 1936 text on household consumption was one of the last major works to dwell on this approach. After

clearing away the fog Zimmerman concluded that "no absolute laws can be postulated" about the relation between income and housing.

> "Now we must conclude that there are no fundamental general relations between income and the proportion used for rent .... The values classified under 'rent' are so complicated and so many influences come to bear upon the rental paid for or imputed to a house that each time and each social situation leads to unique results ...." (p.194)
>
> "Rent-paying, either in an economic or popular sense, is an expression of the general culture and cannot be understood except for its specific results under given conditions and at particular times.... In general, it appears that the relations between income and expenditure in the field of housing are so unpredictable and so varied that no absolute laws can be postulated." (Zimmerman, 1936:197)

1.3 "One week's Wage for One Month's Rent"

These housing "laws" and similar sorts of conjectures entered popular usage in the late nineteenth century in yet further distilled and simplified forms. The major usage emerged as the adage "one week's wage for one month's rent." By the 1880s a week's wage for a month's rent was a widely used way of describing the housing expenses of many tenants. Kengott's 1912 study of the budgets of workers in Lowell, Massachusetts found, for example, that they usually set aside 20% to 25% for rent, light and fuel (Kengott, 1912:128-129, 136). Kengott also noted that housing studies in a number of cities in the late nineteenth century found that the rents consumed "at least twenty per cent of the earnings of the husband in the family" (Kengott, 1912:57). "A summary of these budgets," in Lowell, revealed that "the husband earns $8.96 per week on the average, and the rent is $8.09 per month; nearly twenty-five per cent of the husband's earnings" (Kengott, 1912:130).

In the late nineteenth century George Pullman, the railroad car manufacturer, built a "model" company town south of Chicago in which the company owned and rented all the housing. In his study of Pullman, Illinois, Buder (1967) found that low wage earners paid about 20% of income on rent, while higher income groups paid more for better quality housing. Pullman represents an example of one large company, as the owner of

all the housing in one community, which had to establish and revise rent levels -- rather than rely on market dynamics, since there was no housing market in the community. Rents were administratively determined and rules were made about who could and could not live in the town. This is much like the problem public housing agencies were to face in the 20th century: at what level should rent be set and who should be allowed to live in the housing? Buder described the cost of housing in Pullman in the following way:

> "In the spring of 1893, a time when paychecks were fattened by overtime, they [workers in private homes] paid a third of their salaries in rent -- as compared with a fifth paid by those in tenements -- and many had to take in boarders to meet expenses. When the company, affected by the depression of 1893, began a policy of cutting salaries and holding rents constant, the workers living in Pullman's single-family houses were the hardest hit of any group within the town." (Buder, 1967:88)
>
> "In actual earnings for April 1894, nearly one-fourth of the shop employees made $31.00 or less; about half, $31.00 to $40.00; and the remainder more. Average rental remained $14.00, which included a flat water fee. Rents went down elsewhere but not in the model town, and this was considered unfair. Aside from the 'barrack' tenements, charges in Pullman had always been high for workingmen. Now during a depression, they became excessive and in instances unbearable. George Pullman had erected his community in the belief that Americans of ordinary incomes could afford superior homes built with the economics of mass production." (Buder, 1967:160)

George Pullman had hoped that his investment in housing would produce a profit of about 6% and that good housing in a pleasant environment would produce happy, or at least contented, workers. Buder reported that neither was achieved. Rent levels in the town were a major issue in the famous Pullman strikes.

The late nineteenth century adage about "one week's wage ..." is similar to the late twentieth century adage about 25% or 30% of income representing the upper limit of affordability. Both are based on not much more than assumptions about the amount that average households tend to or ought to pay for housing without ever specifying which households are being averaged or how the normative "ought" statement was derived.

What had occurred over the decades was the translation of some empirically-based observations about what some households were spending into assumptions about what they "ought" to be spending. The summary of all these observations and assumptions then took the easy-to-use format of a ratio of housing expenditure-to-income, which was increasingly referred to as the "rule of thumb" about the ability households to pay for housing.

2. Evolution: From "Law Mania" to a Standardized "Rule of Thumb"

> *"... the social sciences, like any other intellectual endeavors, are subject to fads. And in a number of cases, the twentieth century has seen the revival of perspectives which emerged before the nineteenth century."*
>
> -- Richard G. Olson (1993:195)

As the eighteenth and nineteenth century attempts to define "laws" of human behaviour and household consumption faded away in the early decades of this century, a housing "rule of thumb" emerged from the adage about "one week's wage." This represented a shift from empirical attempts by social scientists to understand certain relationships, to the adoption of a simplifying assumption by housing practitioners about what households could or should be paying for housing. The history below demonstrates that during the first half of this century a housing expenditure-to-income ratio was used in various ways throughout North America by social welfare advocates, by the mortgage lending institutions, by government in its statistical studies of housing problems, and in the determination of eligibility and the setting of rents in the early government subsidized public housing projects. It was not until the 1960s that a large body of scholarly writing began to emerge on the economics of housing markets and household expenditure patterns which uniformly questioned the validity and reliability of a ratio "rule of thumb" measure of ability to pay for housing.

2.1 Social Welfare Advocates

During the first decades of this century a mix of clergy, public health officials, town planners, social workers, temperance activists, members of various women's organizations, and local business interests sought to improve the quality of urban life (Hulchanski, 1981:12-89). Rutherford noted that "urban reform" was "less a single creed

and more a common approach to a wide variety of urban problems" (1984:437). Housing was one of the main concerns during this period of rapid urbanization, immigration and industrialization in North America. When the social welfare advocates among these urban reformers referred to a housing expenditure-to-income ratio the most commonly used figure was 20%. It appears to have been used mainly as a summary measure for describing the cash requirements of a household for meeting all its basic needs. As the largest single lump-sum cash requirement, housing cost was easy to single out as a quick and easy indicator of potential hardship, though it is difficult to find any empirical basis for this assertion. A housing standard describing "fundamental requirements for normal living," for example, was established by the U.S. National Conference of Charities and Correction in 1912. It claimed that "a rental not exceeding 20 per cent of the family income" was the upper limit of what households "should" pay.

> "The Right to a Home. Social welfare demands for every family a safe and sanitary home; healthful surroundings; ample and pure running water inside the house; modern and sanitary toilet conveniences for its exclusive use, located inside the building; adequate sunlight and ventilation; reasonable fire protection; privacy; rooms of sufficient size and number to decently house the members of the family; freedom from dampness; prompt, adequate collection of waste materials. These fundamental requirements for normal living should be obtainable by every family, reasonably accessible from place of employment, at a rental not exceeding 20 per cent of the family income." (Wood, 1919:10)

This is a statement about what these households *should* pay, though there was no explanation as to how the 20% was derived.

There was little sympathy among the social elite for the housing plight of the poor. Thus Canada did not start providing government subsidized housing until 1949 (Rose, 1980; Bacher, 1993). For many outside the emerging group of social reformers, the housing plight of lower income Canadians was seen to be their own fault and even if "we" tried to help them they would likely be ungrateful and continue to live in an unsanitary manner. This was the message of the Governor General of Canada, the Duke of Connaught, in his opening address to the first national housing conference in Canada.

> "It is not sufficient to provide suitable and sanitary buildings. Many thousands of the working classes are far from grateful for being put into them. This phenomenon has repeatedly evinced itself in other great cities. You have not only to provide improved conditions of housing, but you have also to educate the working classes to such an extent that they will insist on living in a decent and sanitary manner." (*The First Canadian Housing and Town Planning Congress, Winnipeg, July 1912. Proceedings*, p. 62)

Even during the 1910s, however, it was recognized by at least some that the market could not provide housing for everyone. A study of actual incomes, housing development costs and rents in the City of Vancouver in 1914 found that for the lowest paid group of workers the "usual proportion of rent to wages is from one-tenth to not exceeding one-eighth" (Fripp, 1914:1277). For this lowest income group the housing market could not both provide housing and make a return. "It appears, then, that the housing of the sub-normal wage earner can only be met in a satisfactory manner at a loss" (Fripp, 1914:1277). This, of course, meant that the market would not provide housing for them. This 1914 study was one of the earlier Canadian reports to distinguish between different income levels, and use a range of housing expenditure-to-income ratios, rather than assert one overall measure.

> "The wage-earners are, broadly speaking, divisible into four classes -- those whose earning capacity is below the normal, unskilled labor of the minimum standard rent-paying capacity; more highly paid unskilled labor, and highly paid skilled labor. It is the members of the first class that sink most easily to the level of the slum dweller and this class affords the most serious economic proposition, for it is unable to pay a rent based even on the lowest standard of decent housing." (Fripp, 1914:1276)

This rudimentary yet more insightful level of analysis was probably not widely known nor replicated in housing studies of other cities.

Since there was virtually no support for any form of subsidized housing, what was the recommended solution for the lack of decent and sanitary housing? The solution in the early decades of this century was not government subsidies but an attack on the high

cost of one main input to housing costs -- the cost of land. There was considerable consensus in Canada among public health and social welfare advocates that the inability of many urban households to obtain decent housing was the consequence of high land values caused by land speculation and the failure to implement residential land use regulations in the rapidly growing suburbs. This excused the economic system and all but one of the key economic actors in the housing system, land speculators, from being blamed for the very bad urban housing conditions. The definition of the urban housing problem in this fashion did not require a housing expenditure-to-income ratio. It was taken for granted that virtually any decent quality housing was not affordable to lower income and impoverished households. Thus there is limited evidence of a housing expenditure-to-income ratio being used by social reformers in Canada during the first half of this century. The focus was on the high cost of urban land. This was the message, for example, provided by P.H. Bryce, Canada's Chief Medical Officer.

> "Hence it at once becomes plain, before we attempt to deal with the questions of houses and of overcrowding, that we must in some manner solve the problem of land values, since it is idle to speak of model workingmen's houses if the value of land or the cost of building materials, upon which rents are based, prevent new houses being constructed, or at such cost as to make rents prohibitive." (Bryce, 1914:4)

Defining the housing problem as one of high land values due to speculation implied that housing would be affordable if residential land was more affordable. "It is quite apparent," Bryce argued, "that the solution for this must be found in one or two ways, either by the lessening of land values to a point making it possible for workmen to purchase land whereon to build, or by builders purchasing land and erecting houses which can be rented" (Bryce, 1914:12). In a society which was rapidly industrializing, the lack of focus on wage levels was most likely appreciated by the manufacturing elite of the day. Bryce, like other advocates of improved urban living conditions, appealed to this group for support by identifying with their self-interest:

> "We thus see that the economic principle of communal interest is there fully developed in the sense that it is realized that every dollar that is saved to the workman not only makes him more effective through being more contented, but

> also because he has more money to clothe, feed and educate his family and so maintain strength and health, and so loses less through sickness and is not a charge upon the municipality or charity." (Bryce, 1914:13)

There was no use of housing expenditure-to-income ratios in this effort to define the housing problem nor were the terms "affordable" or "affordability" used to define Canada's housing problem. This approach continued until the 1930s. When the Social Service Council of Canada, for example, published two reports on the housing problem during the prosperity of the late 1920s, the focus of the problem definition was still on the high price of land. The first volume of A.G. Dalzell's *Housing in Canada* was subtitled *Housing in Relation to Land Development.*

> "In Canada, as in most other countries, private enterprise no longer makes any attempt to provide homes for the poorest people on a renting basis.... The poorest people in Canada today, in their search for housing accommodation, are faced with the necessity of taking rooms in tenements, or large houses vacated by the wealthier classes, or they must go to the outskirts of the city and build shacks." (Dalzell, 1927:5)

> "Every house requires a site, but the selection and provision of sites, and very often the provision of the building itself, has been left to speculators, who do not and cannot take into account the infinite social ramifications involved in the proper housing of the mass of people. Housing ... is a matter in which more collective foresight, and more collective design is very urgently needed." (Dalzell, 1927:1).

"The only hope of securing better housing accommodation at reasonable prices," according to Dalzell, "is by securing a reduction in the cost of the land and its improvement, and we hope to show that this is possible for Canada if new methods are adopted." (p.12) The high price of urban residential land had two effects: "It led to congestion and intensive use of land on the one hand, and it led to dispersion of population and waste of land on the other hand." (p.19) Dalzell's second report, subtitled *The Housing of the Working Classes*, made only one passing mention of the income ratio

definition of the housing problem: "Probably more than one-fifth of the wages of the average worker is spent securing shelter" (Dalzell, 1928:11).

Social reformers in the early part of the century, therefore, tended to recognize that the poor and many lower-wage workers could not afford decent housing. They lived in overcrowded, often unsanitary and unsafe, slum conditions. A major public role in the provision of housing was not politically acceptable. The "evil" land speculator provided the necessary target for attributing blame. The use of a housing expenditure-to-income ratio was not necessary because it was taken for granted that most of these impoverished urban households could not afford any decent housing.

2.2 Mortgage Lenders

As the mortgage lending industry flourished with the expanding population of urban households able to purchase a house, mortgage lenders needed and developed their own version of an easy to use indicator of the ability to pay the mortgage. Unlike the social reformers who were concerned about those who were inadequately housed, the business world of the professional mortgage lender, as well as the emerging group of professional landlords, quickly adopted a housing expenditure-to-income ratio as a "rule of thumb" about who could pay the mortgage or rent. It was assumed throughout much of the first half of this century that a household should only purchase a house costing two or two and a half times its annual (usually gross) income and that monthly carrying costs should not exceed one per cent of the value of the house. These assumptions were based on calculations which converted the standard 20% "rule of thumb" about rent into a rule based on the cost of the house. Using the typical assumptions of the 1920s, Lane (1977:8) calculated that a loan for 60% of the house value at 6% interest for 12 years, meant that a household with an income of $2,650 per year could purchase a home worth up to $6,600 and incur mortgage costs of about $39 per month. Twenty-five per cent of this household's annual income would be $55; $39 would be set aside for principal and interest, and $16 would remain for taxes, insurance, utilities, and maintenance.

A 1923 U.S. Department of Commerce publication, *How to Own Your Own Home*, while asserting that all households have different spending patterns and that "no rule can

be set up that will apply in all cases," asserts that income must be about two times the value of the house.

> "[F]amilies having the same annual income may not be able to devote the same amount to the purchase of a home. For example, a family of two without dependents, situated in a village where living costs are low, can pay out more annually for a home than can a family with children and no other dependents living in a large city.... No rule can be set up that will apply in all cases. It is assumed, however, ... that the value of the house and lot will lie between 1 2/3 and 2 1/2 times one's annual income, the ordinary proportion being around 2 times." (Wood, 1938:91-92)

In August 1931 President Herbert Hoover established the President's Conference on Home Building and Home Ownership. In *Housing Objectives and Programs*, volume 11 of the final report by the Conference, a very detailed list of "The Standards and Objectives of Housing," was provided (Gries & Ford, 1932b:150-201). In the section on financing of owner occupied and rental housing the following ratios were asserted with no explanation for how these conclusions were reached.

> "The purchase of a home should not, as a rule, exceed twice the assured annual income. If the family is of less than average size, this proportion may be somewhat increased.... Families should not have to pay more than 20% of their income for rent without heat, or 25% where heat is included. Families with extra small income or with an extra large number of dependents cannot without hardship pay as much as 20% of their income for rent." (Gries & Ford, 1932b:193, 195)

One possible source of these estimates may have been a study carried out by Ralph J. Watkins, director of the Bureau of Business Research at the University of Pittsburgh. About 1,400 heads of households living in downtown Pittsburgh were surveyed. The preliminary report on some of the findings was published as "Housing Problems of Salaried Workers" in an appendix of Volume 3 of the President's Conference reports (Gries & Ford, 1932a:138-142). Watkins' study included the following about rent-to-income ratios:

> "A fairly consistent relation between salary and rent was found. The average rents of groups at different salary levels vary with income, but the variation is not proportional. All renters, on the average, paid 23.6 per cent of their salary for rent but the proportion of salary required for rent declines fairly sharply as salary increases. The lower salaried groups ... paid from 28 to 35 per cent of their salary in rent" while those with the highest salaries "averaged less than 20 per cent." (Gries & Ford, 1932a:139)

In studying the relationship between house costs and income, "it was realized that date of purchase was a confusing factor because of changes in the real estate price level and changes in the income status of the home owner." A range from a high of 3.4 years income to a low of one year's income for the value of a house was found (Gries & Ford, 1932a:140).

Here we find Quételet's "average man" thesis in operation. Any empirical studies which can be found on the housing expenditure-to-income ratio during the early part of this century simply calculate the average expenditure of some group of renters or house buyers. This is what Watkins did. There was no explicit or even implicit theory or rationale beyond accepting an assumption about using averages in defining a housing ability to pay "rule of thumb." There was also no examination of the nature of the "income" measure being used. This twentieth century "rule," which Quételet and others in the previous century called a "law," was then applied to everyone. In practice, however, it was not actually universal in its implications. The use of this statistical average affected all lower than average income households. By definition, higher than average income households were "excused" from this ability to pay test. They could easily pass the test due to their higher than average incomes. The ratio was thus an arbitrary cut-off point used to quickly identify and dismiss lower than average income households.

2.3 Government Studies and Statistics

In its effort to contribute data on household budgets, the United States Bureau of Labour Statistics collected data from 1900 to 1902 on the expenditures of about 25,000 families and analyzed how they spent their incomes. The ratio of rental expenditures

(rent, fuel, and light) to total expenditures ranged from 25% for families with annual incomes of less than $600 to 21% for families earning $1,100 or more. In 1918, another Bureau of Labour Statistics survey showed that rental expenditure-to-income ratios ranged from 21% for the lowest income group to 15% for the highest income group (Lane 1977:7). In Canada, a 1915 federal government Board of Inquiry into the Cost of Living found that, from 1900 to 1913, in terms of percentage of income spent, food had risen little but urban rents had jumped from 20.9% to 24.7% of household income (Spragge, 1979:249).

Government statistics such as these helped fuel the use of a housing expenditure-to-income ratio by providing the data to identify the *average* expenditure of at least some households. With each passing decade the quality of the data on housing expenditures available from official U.S. and Canadian government sources improved. The economic conditions during the 1930s provided the impetus in both countries to further improve their analysis of housing problems. The following is a summary of the Canadian government's contribution to improving the data available for analyzing housing conditions.

During the Depression the Canadian House of Commons established a Special Committee on Housing which, in its April 1935 final report, concluded that "'white collar' wage earners can, in general, afford one-third of their incomes for rental but the semi-skilled factory worker and the unskilled labourer with incomes from $550 to $750 cannot, as a matter of social economics, afford to pay more than one-fifth of their incomes for rent." (Canada, House of Commons, 1935:364; see also Bacher, 1993:75-83; Hulchanski, 1986:21-26). One witness, a prominent urban planner, Noulan Cauchon, mentioned that the 20% rent-to-income ratio represented a "reasonable proportion" to spend on housing. Cauchon told the Committee that:

> "with workingmen if you exceed roughly 20 per cent of his income he is going to skimp on something else. He has only got so much money and if he takes off more for his rental than represents a reasonable proportion he is going to have to cut down on food and clothing for himself and his family -- there are no two ways about it." (Bacher, 1993:80)

In its report the Special Committee provided the following estimates of the rent-to-income ratios for different "wage earning groups": white collar workers, 33%; artisans and skilled wage earners, 25%; and semi-skilled and unskilled, low wage groups, 20% (Canada, House of Commons, 1935:373). These estimates, however, were simply lifted from a 1935 study by the Joint Committee of the Montreal Board of Trade and the City Improvement League, *A Report on Housing and Slum Clearance for Montreal.* The data was only related to the Montreal housing market, but no where else in Canada. The Special Committee was so frustrated with the lack of housing data that among its recommendations was one calling on the government to carry out statistical research on housing conditions. As a result, the Dominion Bureau of Statistics published two reports, both by H.F. Greenway: *The Housing Accommodation of the Canadian People*, in 1935, and *Urban Earnings and Housing Accommodation of Canadians*, in 1938. These two were supplemented in 1939 by a Royal Commission background paper, *Housing: A Study Prepared for the Royal Commission on Dominion-Provincial Relations*, by A.E. Grauer.

In the 1935 report, a presentation of 1931 census data related to housing, Greenway found that "as rentals increased, so did earnings," which he referred to as the expected "natural relationship" between rent levels and incomes (Canada, Dominion Bureau of Statistics, 1935:11). It was his 1938 report that presented a very detailed and, for that time, a fairly sophisticated empirical analysis of the relationship between rent levels and household incomes. It analysed incomes and housing for households in 14 cities, drawing on the 1931 and 1936 census records. The average household rent-to-income ratios were found to range from 19% to 27% for the fourteen major cities (Canada, Dominion Bureau of Statistics, 1938:27). The section on "Earnings and Rentals" mentioned Ernst Engel's "law" and the difficulties of asserting broad generalizations about household spending patterns.

> "Surveys of family expenditure in Canada and the United States have indicated that the proportion of income required for the shelter of tenant families, usually averages between 20 and 25 p.c. However, averages hide a variable tendency at different income levels... [T]he proportion of earnings spent on necessities such as shelter tends to decline gradually in the higher income groups. There are appreciable differences in the rate of this decline, depending upon the supply of

housing accommodation and upon housing standards." (Canada, Dominion Bureau of Statistics, 1938:27)

The data was found to "point to wide differences in emphasis placed upon housing among low-paid wage earners..." Great variation in rent-to-income ratios was found among low income households and less variation among higher income renters: "there was little sign of central tendency in rent-earnings ratios in the lower earnings groups, but such a tendency became quite pronounced in groups above $1,600. Presumably, emphasis upon home comfort varied more widely in families with earnings below this figure, than where earnings were higher" (Canada, Dominion Bureau of Statistics, 1938:29,32).

This was the first sophisticated analysis of housing costs in relation to incomes in Canada. Like the host of academic studies which have appeared since the 1960s, it did not assume one average ratio as a valid measure. To the contrary, Greenway provided a critical analysis of the complex relationships, concluding with the following observations:

"The apparently conflicting evidence of the two types of frequency distributions really presents two aspects of a complex situation. The principal facts which they reveal may be summed up as follows:

1. There is a definite tendency for tenant families to spend a smaller percentage of earnings upon rent at progressively higher earnings levels. The absolute amount of rent increases, but not so fast as outlays in other sections of the family budget....

2. The lack of trend in rent-earnings ratios as between different rent groups does not contradict evidence of the tendency just noted. This arrangement of the ratios does draw attention, however, to the wide variations in the importance of the home in the lives of different families....

3. Frequency distributions indicate a greater consistency of rent-earnings ratios in earnings groups above $2,000 per annum than below this figure." [In 1931 the average household income for tenants was $1,400 and $1,700 for owners.] (Canada, Dominion Bureau of Statistics, 1938:32)

Thus, by the late 1930s, a careful analysis of housing expenditure patterns by Canada's Bureau of Statistics found no "central tendency" which would justify the validity and reliability of a measure of housing affordability based on a housing expenditure-to-income ratio. It is unlikely that this report received much attention among housing practitioners (mortgage lenders and landlords) at the time. It was published as the Depression was ending and as the country was turning its attention to the war in Europe.

2.4 Setting Rent Levels in Government Housing

The housing expenditure-to-income ratio was put to use in the implementation and administration of public policy when it became necessary to determine who should be eligible to live in government subsidized housing. The United States and Canada adopted legislation authorizing the construction of public housing at about the same time (though Canada did not build any units until the late 1940s). Subsidized housing programs required some measure for making administrative decisions about who would qualify for the subsidized units. There seemed to be little debate on using an income ratio for program and policy purposes. The debate focused on exactly *which* rent-to-income ratio should be used. The choice, as in most public program and policy matters, was a political one. No research was commissioned nor could further empirical research answer what was essentially a normative question.

United States: The 1937 Housing Act. The United States Housing Act of 1937, first introduced two years earlier as the Wagner-Steagall Low Rent Housing Bill, and commonly known as the Wagner Housing Act, established a permanent public housing program and led to the growth and expansion of local public housing authorities. The United States Housing Authority was empowered to issue securities and provide capital grants to local housing authorities. Occupancy in public housing was defined by the legislation after a great deal of debate. It was limited to "families whose income at the time of admission does not exceed five times the rental (including utilities), except that in the case of families with three or more minor dependents, such ratio shall not exceed six to one."

In a 1935 radio address advocating the program, Senator Robert Wagner explained that the "object of public housing, in a nutshell, ... is to supplement what private industry

will do, by subsidies which will make up the difference between what the poor can afford to pay and what is necessary to assure decent living quarters..." (McDonnell, 1957:135.) Reference to the fact that many of the poor could not "afford" market housing was Wagner's response to those who opposed a direct government role in the provision of housing. It raised, however, the question of what the poor could "afford to pay." The housing expenditure-to-income ratio was used, therefore, for program administration as a key part of the definition of who qualified for public housing and, for those living in the units, the basis upon which their rent would be set.

There was a great deal of debate in committees of Congress over which rent-to-income ratio to use, an indication of the arbitrary nature of the choice. Advocates of public housing favoured use of the 20%, while others favoured 25%. The lower ratio would include more households and households with lower incomes than the higher ratio. In the end, the House voted for 25% and the Senate for 20%. When the bill went to Conference to work out the differences in both versions the accepted compromise was 20%. The definition of low-income families was therefore fixed at a ratio of rent-to-income of five to one with six to one for families with three or more dependents. As McDonnell (1957:391) reported in his history of the legislation, this was a victory for the Senate and for public housing groups, such as the Labor Housing Conference.

Canada: The 1938 National Housing Act. In Canada, the 1938 National Housing Act was much more comprehensive than the 1935 Dominion Housing Act which it replaced (Hulchanski, 1986). The second part of the 1938 NHA authorized the federal government to make loans to local housing authorities to assist in the construction of housing for low income families. Even though the 1938 NHA never resulted in the construction of any rental housing, the fact that it contained provisions for a low-rent housing supply program meant that the issue of allocation of units had to be addressed. A.E. Grauer's 1939 report on housing for the Royal Commission on Dominion-Provincial Relations provided the following explanation for the Canadian government's rationale in selecting a 20% rent-to-income ratio for defining housing need.

> "The Act establishes the principle of selected tenancy and of an economic ratio between income and rent. This is an innovation for Canadian Housing legislation and one designed to ensure accommodation for 'families of low income.' Such

> families are defined as those receiving a total family income of less than five times the economic rental of a housing unit which would provide sufficient accommodation for the family. This is on the basis of the widely held rule that working-class families should not spend more than 20% of their income for rent. Any family, therefore, that cannot find housing accommodation on the open market except at more than 20% of its income, is eligible to rent a house or an apartment on a low rental project at less than its economic rent." (Grauer, 1939:44a)

The "economic rental" was defined as "a rental at the rate of 9½% of the unit's cost of construction (including cost of land, architectural and legal expenses, etc.), plus an amount sufficient to pay the municipal taxes" (Grauer, 1939:44a). As in the United States, the 20% rent-to-income ratio was to be used as a cut-off point, as one key part of the complex formula for determining who would have access to the subsidized units.

> "In order to maintain the low rental character of the project, the local authority must agree that no housing unit will be leased to any family whose total income is equal to five times the economic rental for each unit, excluding charges for water and heating.... " (Grauer, 1939:44a)

Grauer noted that there was a great deal of political opposition to the public housing part of the 1938 NHA: "It should be mentioned that strong objection is taken to this legislation in some quarters on the ground that it provides unfair competition to existing vested interests in the housing field at a time when they are suffering seriously. Similar objections have been levelled against housing legislation in all countries" (Grauer, 1939:44b; see also Bacher, 1993:66-119; Hulchanski, 1986).

In summary, the "rule of thumb" about housing expenditures has its roots in the nineteenth century and became part of the conventional wisdom associated with housing during the first half of the twentieth. It was mainly used by both the private and public sectors in an attempt to describe average household expenditures on housing. There was little analysis of the ratio as a valid and reliable measure, such as the careful analysis found in Greenway's 1938 Dominion Bureau of Statistics study. The ratio became an established "rule" (rather than a "law" as in the nineteenth century) providing a summary

description of the maximum proportion of income that *should* be devoted to rent or to a mortgage.

This assertion that rents or mortgage payments should not exceed a certain percentage of income permeates housing discussion throughout the twentieth century. For some, the housing expenditure-to-income ratio became a measure of housing affordability for public policy purposes -- a rule used in allocating public housing units. For others, it became a measure of ability to pay -- a rule used in making business decisions (decisions about who to rent to and who to grant a mortgage to). Yet, as this history of the origins and evolution of the measure has found, it is difficult to find the users of this statistical average "rule of thumb" offering any empirical rationale in support for its validity and reliability as a measure. There is no study or set of studies or body of literature concluding that a certain ratio or any ratio is an appropriate measure of what a household ought to spend or is able to spend.

By the 1930s a gap began to emerge between the day-to-day practical users of the ratio in housing decisions, the public and private sector housing practitioners, and the scholarly/academic group of housing analysts. By the 1930s the debate started in the mid-nineteenth century associated with attempts to generalize about the relationship between the level of household income and housing expenditures was largely settled in scholarly circles. Zimmerman's (1936) and Greenway's (1938) work are examples of the conclusions reached by the 1930s about the fruitlessness of attempts at making "laws" or "rules" -- any broad universal generalizations -- about the relationship between such complex aspects of human behaviour as housing expenditure patterns and household income. Yet the use of a simple expenditure-to-income ratio continued and, to a large extent, became institutionalized by the private housing sector as a measure of ability to pay. Six distinct ways in which contemporary housing literature and housing practice use the housing expenditure-to-income ratio are reviewed in the next chapter.

3. Implications: Six Contemporary Uses of the Percent of Income "Rules of Thumb"

"Rent-to-income ratios are the most commonly used measure of affordability. However, they present numerous difficulties, quite apart from the fact that whatever actual ratio is chosen, it is bound to be arbitrary."

-- John R. Miron and J. Barry Cullingworth (1983:93)

"The use of the rule of thumb is, at present, justified primarily by tradition. What constitutes a 'normal' allocation of income for shelter is not well understood, and even less is known about the maximum housing expenditure a family can make without jeopardizing its ability to purchase other necessities."

-- Terry S. Lane (1977:iv-v)

It is far too simple to state that the housing expenditure-to-income ratio is either valid or invalid, useful or not useful, or that it is being used appropriately or inappropriately. Instead, we must ask, in what way is the housing expenditure-to-income ratio being used? What is it supposed to be measuring? Does it do so in a valid and reliable manner? In the postwar housing literature it is possible to find the ratio being used in six distinct ways:

(1) *description* of household expenditures;
(2) *analysis* of trends and comparison of different household types;
(3) *administration* of public housing by defining eligibility criteria and subsidy levels in rent geared-to-income housing;
(4) *definition* of housing need for public policy purposes;
(5) *prediction* of the ability of a tenant household to pay market rent; and
(6) *selection* of tenants who can afford to pay market rent.

Much of the contemporary *practical* or *applied* use of the housing expenditure-to-income ratio seems to relate to defining the ability to pay for housing. The above list helps in the process of distinguishing between valid and invalid, appropriate and inappropriate uses of housing expenditure-to-income ratios.

The list can be divided into two categories. The first three uses -- description, analysis and administration -- can be considered quite valid and helpful when used properly by housing researchers and administrators. "Used properly" means that the research methods and the statistical analysis techniques are properly carried out -- i.e., no significant methodological errors are made. This leads to valid and reliable descriptive and analytic statements about the housing expenditures of the different types of households being studied. This type of description and analysis of household expenditure patterns can also be helpful in defining administrative rules about eligibility for *means-tested*, as opposed to *universal*, housing programs.

Figure 2

The Housing Expenditure-to-Income Ratio:
Six Uses of the Percent of Income "Rules of Thumb"

1	**DESCRIPTION**	describe a typical household's housing expenditure
2	**ANALYSIS**	analyse trends, compare different household types
3	**ADMINISTRATION**	administer rules defining who can access housing subsidies
4	**DEFINITION**	define housing need for policy purposes
5	**PREDICTION**	predict ability of a tenant household to pay market rent
6	**SELECTION**	select tenants who can afford to pay the rent

Source: Based on a review of the origins and evolution of the housing expenditure-to-income ratio. J.D. Hulchanski, University of Toronto. March 1994.

The improper and inappropriate use of housing expenditure-to-income ratios, leading to invalid and unreliable results, is due to a variety of theoretical and conceptual errors. Uses four, five and six -- definition, prediction, and selection -- *are all invalid uses for they fail to measure what they claim to be measuring*, even if the research methods and the statistical analysis techniques are properly carried out. The ratio is faulty when used to define housing need and tp predict the ability of households to pay for housing due to a faulty conceptualization of the income part of the ratio (see Hulchanski & Michalski, 1994). An additional conceptual problem arises because it applies a statistical average of a group of households to an individual household, leading to the problem of statistical discrimination (Thurow, 1975). Each of the six uses is examined below.

3.1 Description of Household Expenditures

Data on housing expenditure-to-income ratios can be useful in describing what different households are spending at selected points in time. Table 1, for example, provides 1991 Census data on the percent of income Ontario households pay for housing, making a distinction between home owners without mortgages, home owners with mortgages and renters. Further details are also provided for different types of renter households. What do these ratios "tell" us?

There can be no objection to using any ratio of any relationship in an attempt to better *describe* some aspect of social reality. The problem is the next step, how should this information be interpreted? The subjective part of even the descriptive use of information starts with the very decision about what questions or relationships are to be examined and what data at what level of detail is to be used. Why use ratios? Why not use other types of comparisons? It simply depends on what questions are being asked by the person who compiles certain data in a certain fashion, leaving out other related data. The numbers do not "speak" for themselves. They are used to demonstrate certain points and contribute to a certain interpretation of what is being examined. What does data about ratios between household income and housing expenditure "tell" us? Table 1, for example, demonstrates that there are different ratios for different household types, something we might have suspected in the first place. Table 1 further provides

Table 1

Percentage of Household Income Spent on Housing in Ontario

Owners and Renters, 1991 Census

1	2	3	4	5	6	7	8	9	10
	Owners		Renters						
Percentage of 1990 Household Income	Owners without mortgages	Owners with mortgages	All Renters	Family Renter Households	One Person Renter Households	One Income Earner in Household	Two Income Earners in Household	Renters in Toronto CMA	Renters in Ottawa-Hull CMA
Less than 20%	88%	38%	39%	45%	28%	35%	53%	38%	42%
20 - 24.9%	5%	18%	16%	15%	17%	16%	16%	17%	16%
25 - 29.9%	3%	14%	12%	10%	15%	13%	10%	12%	11%
30 - 39.9%	2%	14%	12%	11%	14%	13%	10%	12%	11%
40 - 49.9%	1%	6%	7%	5%	9%	7%	4%	6%	6%
50% and over	2%	10%	15%	13%	18%	17%	8%	15%	14%
	100%	100%	100%	100%	100%	100%	100%	100%	100%
Average Income	$58,894	$66,393	$34,971	$39,569	$21,592	$30,434	$46,535	$39,722	$35,620
Number of Households	1,100,900	1,156,475	1,298,620	626,225	483,565	958,090	310,850	565,555	153,250
Total spending 30% or more	5%	30%	33%	29%	40%	37%	22%	33%	31%

Source: Statistics Canada, Housing Costs and Other Characteristics of Canadian Households, Cat 93-330, May 1993, Tables 4, 5 and 12.

information about the range of differences between the identified household types. This is about it. No claim about "rules of thumb" or human dynamics or affordability patterns or ability to pay rent are being made, nor can they be made -- without adding a great deal more information, analysis and theory, leading to some interpretive statements.

3.2 Analysis of Trends

Rent-to-income ratios can be used to test hypotheses and to carry out comparative research. In a recent study, for example, Susan J. Smith (1990) used the "regular housing outlays as a proportion of regular income" to examine the relative position in the housing system of different types of households based on the gender, race and other characteristics of the household head. The concept of "housing outlays"

> "measures the financial stress incurred by individuals in paying rents, rates and mortgage costs (capital and interest components) in order to sustain a position in the housing system. (It is then, a measure of liquidity rather than of assets.) This measure also gives an indication of what portion of people's current disposable income remains for other household expenditures after mandatory housing costs (costs that are inescapable in the short run) have been met. While housing outlays may not give the most precise estimate of housing costs (they do not take into account a range of other routine expenditures on maintenance, repair, improvements and so on), they probably constitute the main item of recurrent expenditure with a bearing on individual's immediate quality of life. Housing outlays represent the biggest and least avoidable regular outgoing from most household budgets...." (Smith, 1990:77)

Use of housing expenditure-to-income ratios in this fashion does not attempt to identify or make subjective claims about affordability problems. A concept was developed (housing outlays) in order to ask questions about different socio-economic groups. The housing expenditure-to-income ratios were used by Smith to help measure the *relative* position in the housing system of different groups of households. This adds to our knowledge and understanding about an aspect of our current social reality -- by isolating certain broad characteristics such as the gender of the head of the household and

identifying how these households compared with other households. Smith concluded, for example, that: "In short, as renters, men seem more successful than women in minimising the proportion of income spent on housing, while as home buyers they [men] are more able to allot relatively higher proportions of their income to potentially lucrative housing investments" (Smith, 1990:85). This is a comparison among categories of household types, not claims about affordability or ability to pay.

This second use of housing expenditure-to-income ratios takes the descriptive use one step further, by using the ratios to help develop concepts and test hypotheses. In Smith's case, the ratio is used as a measure of "housing outlay" and housing outlay is a measure of the "financial stress" on groups of households. Data, in the form of housing expenditure-to-income ratios, is gathered to test out hypotheses related to these concepts. There is no simple use of a 30% "rule of thumb" and the data provided in Table 1, for example, is of little use in the type of analysis Smith carried out. It is not data about the kinds of household types Smith's theoretical framework required.

The point here is simply that housing expenditure-to-income ratios can be used in a valid and reliable fashion to test hypotheses and improve our understanding of certain societal dynamics. The ratios, however, do not "speak" for themselves. The researcher's theoretical and conceptual framework uses data in the form of these ratios, usually in combination with data organized in many other ways, to identify certain relationships, interpret them, and draw conclusions. The researcher is speaking, not the data.

3.3 Administration of Public Sector Housing Subsidies

Close to six percent of Canada's housing stock is in the non-market sector. These are housing units in projects financed by a series of government housing programs, known generally as public housing and non-profit social housing (municipal, private and co-operative non-profits). When housing units are not allocated on a market basis, and when the program is not universal (that is, not available to everyone equally, such as Canada's health care system), regulations define eligibility. The regulations used throughout Canada's five decade long history of subsidizing public housing and non-profit social housing include a formula that uses a housing expenditure-to-income ratio.

The income ratio is but one part of a complex set of administrative regulations assessing eligibility and determining rent levels for subsidized housing. The ratio is, in effect, used as a measure to keep out higher income households, a rationing device to target housing subsidy dollars. Administrators in the public sector have to draw a line related to eligibility for programs which are not universal. Any variety of quantitative and qualitative measures may be employed. The decision as to *where to draw the line*, that is, what specific definition of eligibility is to be used for a subsidy program, is a *subjective judgement.* It cannot be based on an objective scientific determination. Science can inform the debate over the judgement call being made, but it cannot answer normative questions -- questions about values and beliefs. What is fair? How do we define "the poor"? Science cannot, for example, define the "poverty line" for Canada. Canadians debate various ways of measuring and defining poverty and then, through their elected representatives, make a choice. Even then, the debate continues because of the highly subjective value-laden nature of the judgement. Because the eligibility criteria for means-tested non-universal public programs, such as public housing, involve a subjective policy decision, a democratic society ideally defines these eligibility measures in a open and fair manner (i.e., an open public debate over policy choices). Research can help inform this debate and improve our understanding of the issue, as outlined above, by *describing* and *analyzing* trends.

The administrative use of housing expenditure-to-income ratios in public sector social housing programs can be confused with the use of the ratios in the private sector (for example uses five and six, *prediction* of ability to pay rent and *selection* of tenants, discussed below). It is, therefore, important to make the distinction between the use of housing expenditure-to-income ratios as *maximum* income criteria (the public sector usage) and *minimum* income criteria (the private sector usage). The public sector uses a maximum income measure as a cutoff point to exclude higher income households from non-universal subsidized housing units, while some private sector landlords use a minimum income measure as a cutoff point to exclude lower income households from access to their rental units. The public sector's use is appropriate because the intent is to ration public subsidy dollars by excluding higher income households. The ratio is a valid means of identifying higher income households. The private sector's use is not valid because the intent is to measure (predict) ability to pay rent and then to select tenants based on the assumption that the ratio is a valid part of the criteria used.

In the public and non-profit sectors *maximum* income criteria are used in the process of defining eligibility for rent geared-to-income housing subsidies, often referred to as "RGI subsidies." The aim is to exclude higher income households so as to target lower income households for a particular type of housing subsidy. Even the term, "rent geared-to-income" makes it clear that income criteria are being applied. They are being used in two ways: to exclude households above a certain income level and to define the amount of subsidy eligible households will receive.

The use of maximum income criteria as part of the process of defining eligibility and subsidy levels for government programs has a long and relatively undisputed history. Debate takes place over specific cut-off points used in defining eligibility and subsidy levels. For example, in the debate over shifting from the use of 20% to 25% of income in the eligibility and rent setting formula for Canada's public housing, one major federal government sponsored review of public housing programs, *Programs in Search of a Policy: Low Income Housing in Canada* (Dennis & Fish, 1972), argued in favour of using 20%. It did so on justice and equity considerations, noting that any figure "will be somewhat arbitrary."

> "For purposes of this analysis, the assumption was made that expenditures exceeding 20 per cent of income are excessive for low income households. Any figure chosen will be somewhat arbitrary." (Dennis & Fish, 1972:58)

The equity argument is based on the fact that the average expenditure on housing for all Canadians in 1969 was 17%, with the top two income quintiles paying 14%. The authors, therefore, argued:

> "there seems to be little justice in requiring households [with very low incomes] ... to spend 25 or 30 per cent of income on shelter. The 20 per cent standard is also considered appropriate because it deals with the ratio of *shelter* alone to *gross* income [i.e., the housing unit without furniture etc.].... One Canadian household in three spends in excess of 20 per cent of income for shelter, one in five in excess of 25 per cent, one in fourteen in excess of 40 per cent, one in thirty-three in excess of 50 per cent." (Dennis & Fish, 1972:58-59)

In the mid-1980s a similar public policy debate took place. The Conservative government, as part of a review of all major government spending programs, announced that it was shifting the income ratio portion of the eligibility and rent setting formula for housing subsidies from 25% to 30%.

> "The study team recommends the [introduction of] ... a new federal rent scale graduated from 25% to 30% of total household income, taking into account household size and income level. This scale would be applied to all income-tested households.... It should be phased in over a three-year period in order to minimize financial hardship on tenants." (Canada, Task Force on Program Review, 1985:36)

This change was recommended, according to the report, "in order to reduce subsidies or improve targeting" (Canada, Task Force on Program Review, 1985:36). It was a subjective decision based on certain values and norms about the role of government and about appropriate levels of subsidies. Others with different values objected to the change. One researcher from the Social Planning Council of Metro Toronto, for example, said the change in the formula, which would reduce subsidies by about $76 million, "would be putting an additional tax on the poor." Many others objected to the change, all with similar justice and equity arguments -- not with claims that there was something scientific about the 25% ratio. (G. York, "The Nielson Task Force Report," *The Globe and Mail*, 13 March 1986, A3.)

Debate over which housing expenditure-to-income ratio to use is similar to the public debate over the poverty line. The definition of the dividing line, those included and those excluded, dramatically affects the number of households considered eligible. In 1988, for example, there were 630,000 households paying between 25% and 30% of their income on housing. If the federal government chose to continue to use the 25% ratio rather than switch to 30%, the 630,000 households would be included resulting in a 50% increase in the number of households considered eligible for social housing assistance (Van Dyk, 1993:36). This demonstrates the arbitrary nature of the public policy choice involved. One choice includes more than half a million households, another choice excludes them. The federal government, in moving from 25% to 30%, offered no research or scientific justification for the switch in ratios -- nor could they offer any. The

newly elected government, at that time, reviewed policy and programs and chose to use a different housing expenditure-to-income ratio in defining eligibility.

Maximum income criteria as part of the criteria in means tested programs, therefore, is a distinctly different use of the housing expenditure-to-income ratio than the other five uses outlined here. There is a long history of using the housing expenditure-to-income ratios in the administrative set of regulations determining eligibility for subsidized housing as well as setting rent levels for the units. There is no claim that the ratio of housing expenditure-to-income used in the formula was selected on the basis of careful scientific study, nor that it is a *valid* and *reliable* measure of anything. It is merely used to ration a scarce resource from the point of view of the public interest. This is, however, quite a distinct use from that of defining housing need in general. The administrative use of housing expenditure-to-income ratios should not be confused with the difficult problem of defining housing *need.*

3.4 Definition of Housing Need

"If a household spends more than twenty-five per cent of its income on housing, it is said to have an 'affordability' problem.... [T]he housing expenditure-to-income ratio should not be used to define housing problems because it is really a proxy measure for whether a household consumes all of life's necessities, and a poor proxy at that." (p.20)
"The development of housing policy in Canada would be well served by abandoning the affordability problem measured by a shelter expenditure-to-income ratio." (p.297)
-- George Fallis (1983)

"The affordability debate has become one primarily concerned with defining a single ratio of rent to income.... The use of a single ratio is far too crude to cope with different household types on different income levels, who have different expenditure requirements."
-- Ade Kearns (1992:540)

It is common to find the housing expenditure-to-income ratio being used as a "rule of thumb" for defining housing need for policy and program purposes in Canada, often referred to as "the housing affordability problem." It is this fourth use of the ratio that housing analysts condemn as being much too simple and, therefore, invalid. To define everyone spending more than 30% of income on housing as having housing problem, for example, takes a descriptive statistical statement (the 30% ratio) and dresses it up as an

interpretative measure of housing need (or lack of need). It does so on the basis of a subjective assertion of what constitutes an "affordable" housing expenditure for *all* households. This kind of generalization is based on an assumption about the cash income required to pay for the other necessities of life.

The selection of a ratio of housing expenditure-to-income has, nonetheless, become a "popular" and commonly used statement about the nature and scope of the "housing affordability problem." Its nature relates to a lack of income, usually assumed to be gross household cash income from employment or transfer payments, and its scope is the number of households paying more than that ratio. For Ontario, as Table 1 indicates, 830,000 households, 23% of the 3.56 million households in the province, were paying 30% or more on housing in 1991. Renters and home owners with mortgages comprised most of these households which, some claim, have a "housing affordability" problem. If they all have a problem, it is a problem of huge proportions: 430,000 renter households, 33% of all renters; 345,000 owner households with mortgages, 30% of all owners with mortgages; and 55,000 owners without mortgages, 5% of this group of owners.

Housing researchers do not defend this use of the housing expenditure-to-income ratio as a valid and reliable method of defining housing problems. Even without considering the limited definition of income used in the ratio, the sweeping generalization that spending more than a certain percentage of income on housing means the household has a "housing problem" is simply not logical. It does not represent the behaviour of real households. Household consumption patterns are extremely diverse and complex. In one of the earlier postwar books on housing policy, David Donnison's highly regarded *The Government of Housing* (1967), the author refers explicitly to the assertion that a certain proportion of income should be devoted to housing as "a popular but ineptly posed conundrum for which some correspondingly inept solutions have been proposed." Donnison states that for individual households "any reckoning based on the income of the household or its principal earner is likely to be misleading" (Donnison, 1967:255-256). This is a widely held view among housing researchers. In his 1984 study of the concept of housing affordability for the Ontario government, economist Denton Marks, in agreement with Donnison, identifies and discusses the following weaknesses of the rent-to-income ratio "as a measure of affordability:"

- it is essentially arbitrary;
- it does not account for household size, which has a bearing on the choice of an appropriate ratio;
- it fails to reflect changes in relative prices in all categories of household expenditures;
- it is not easily adjusted for the amount of housing services being consumed and the substitutions available to the household;
- it relies on current rather than permanent income and is subject to seasonal and cyclical sensitivity. (Marks, 1984:25-26)

This recognition of the diversity of household types and the complexity of household consumption patterns permeates housing research literature. In his research on defining housing measures Stone (1990), for example, notes that the ratio definition of housing need fails to "grapple in a logically sound way" with the wide variation in what households can actually afford to pay.

> "Any attempt to reduce affordability of housing to a single percentage of income -- no matter how low or high -- simply does not correspond to the reality of fundamental and obvious differences among households. Even attempts to establish a few prototypical groups and have somewhat different percentages for each, or set up narrow ranges in order to recognize some differences, fail to grapple in a logically sound way with the range of variation in what households really can afford to pay." (Stone, 1990:50-51)

Households can and do pay a great deal or very little for housing, whatever their income level, as any data on housing expenditure-to-income ratios demonstrate. The ratio definition of need, therefore, is simply not a valid measure of housing need. It fails to account for the diversity in household types, stages in the life cycle of the maintainer(s) of each household, the great diversity in household consumption patterns, and the problem of defining income -- the focus on only cash income.

Part of the problem with seeking a scientific empirical basis for the "rule of thumb" ratio can be found in its very definition. It is, by definition, not based on scientific knowledge. According to the *Oxford English Dictionary*, a "rule of thumb" is a "method or procedure derived entirely from practice or experience, without any basis in scientific knowledge; a roughly practical method." (OED, 2nd edition, vol. XIV, p.232)

In 1981 the United States and Canadian governments published the results of their national housing agencies' joint efforts to develop a new way of defining a nation's housing need (Burke, Casey, Doepner, 1981). In place of the housing expenditure-to-income ratio by itself, a ratio with a number of adjustments was defined as the "core housing need approach" which "seeks to identify those households currently experiencing housing problems who would be unable to obtain minimum standard housing without paying an excessive proportion of their income for shelter" (Burke, Casey, Doepner, 1981:4). But what constitutes an "excessive" proportion?

> "What constitutes an excessive proportion of income to allocate for housing costs is a judgemental matter, and views vary widely among countries. Among developing countries, 10% to 15% of income has been considered a reasonable maximum to spend on housing. Among West European countries, between 15% and 20% has traditionally been considered a maximum for social policy. In North America, a range of 20% to 30% has been historically regarded as a fair rate of expenditure for housing. The higher the level of "per capita" income, the higher has been the proportion of income accepted as fair for housing costs." (Burke, Casey, Doepner, 1981:7)

Why does the number of households paying an "excessive" amount of their income on shelter constitute a housing affordability problem? This measure, the report notes,

> "has been criticized as overstating affordability problems because it does not take into account what might be described as voluntary over-consumption of housing services. Moreover, the measurement of affordability for homeowners is often oversimplified because it ignores investment aspects and tax advantages enjoyed by homeowners in the U.S., and to a lesser degree in Canada." (Burke, Casey, Doepner, 1981:3)

A new measure was proposed because "the shelter to income ratio approach, by itself, is not an accurate measure of housing need" (Burke, Casey, Doepner, 1981:10). This effort in the early 1980s led to Canada's development and, in 1986, formal adoption of, a housing need assessment technique called the "core housing need model" (CMHC, 1991;

CMHC, 1992; Van Dyk, 1993). According to the federal government, housing needs indicators seek to:

> "identify where housing conditions fall below norms, as measured by specific housing standards established for housing adequacy, suitability and affordability. When integrated into the *Core Housing Need Model*, they identify those households unable to obtain market housing that is in adequate condition, of suitable size and, at the same time, affordable. This information enables the federal government to design, deliver and evaluate its social housing programs, to which it currently devotes some $1.8 billion per year to help needy households."

CMHC's core housing need model, however, grew out of the need to have a formula for the national allocation of federal housing subsidy dollars (to the ten provinces and two territories). This is itself a highly political process. Core housing need is still based on an arbitrarily selected housing expenditure-to-income ratio (currently 30% of income). According to CMHC: "Determining affordability has been, and still is, based on the proportion of income set as the maximum that a household should spend on shelter" (CMHC, 1991:4). Is there an empirical basis for the "should" measure in this statement? What is the basis? None is provided.

The formula for calculating Core Housing Need makes adjustments for housing adequacy and suitability and for households deemed to be paying more than 30% by choice. It therefore fiddles with the calculation of the number of households included within the definition of need, but it is still based on the arbitrarily selected 30% ratio. The 30% ratio is the proxy measure for the missing research on what households can afford to spend. The ratio is the undocumented "should" part of the core housing need formula. The entire core housing need model is based on aggregate averages and "norm rents" for local housing markets. As a definition of housing need in Canada, it is not a valid and reliable measure of households with a housing problem for the same reasons the housing expenditure-to-income ratio is not valid. It is an arbitrary measure due to the arbitrary selection of a housing expenditure-to-income ratio. As economist George Fallis (1983:20) concluded, the "housing expenditure-to-income ratio should not be used to define housing problems because it is really a proxy measure for whether a household consumes all of life's necessities, and a poor proxy at that." As a measure of housing

affordability, he adds, the development of housing policy "would be well served by abandoning the affordability problem measured by a shelter expenditure-to-income ratio" (Fallis, 1983:297).

The point here is not that CMHC's core housing need model is a worthless or useless exercise. If its major use is in defining eligibility criteria for housing subsidies and then distributing these subsidies to the provinces and territories, and if it does so on a valid and reliable basis, then it serves a necessary purpose. This is the third use of the six uses of housing expenditure-to-income ratios (discussed in section 3.3 above). If, however, the claim or belief is that the core housing need model *defines* Canada's housing problems, and is a valid and reliable definition of housing need for policy and program purposes, then it is an unproductive exercise.

Housing analyst Nick Van Dyk (1993) carried out the first independent review of the core housing need model. While his work is focused mainly on the technical problems with the data and the methodological aspects of the model, his report contains a chapter entitled "Housing Issues not Dealt With." These include: no recognition of tight rental markets; homelessness is ignored; all forms of discrimination in housing markets is ignored; accessibility of housing units (for those with physical disabilities) is ignored; households with special needs are ignored; and the quality of the existing housing stock is not considered (Van Dyk, 1993:40-42). He concludes with a host of serious questions about the model's "validity and usefulness" (p.52). The United States and Great Britain, it should be noted, do not rely on a housing expenditure-to-income ratio for defining housing need (CMHC, 1992; Van Dyk, 1993:58-59). Both countries use a much more sophisticated composite index.

3.5 Prediction of a Household's Ability to Pay Rent

"Our probe into the housing data of the Study of Consumer Expenditures yields one main conclusion: housing expenditures of American families are far too diverse to be explained by simple principles.... Choice of housing (which necessarily means choice of community and neighorhood) is a response to an extremely complex set of economic, social, and psychological impulses.... A source of constant perplexity throughout our analysis was the relatively small share of total variation in housing expenditures that could be explained by seemingly important economic and social variables.... Income, the most

> *significant factor, accounts on the average for only 10 percent of the total variance in housing expenditures. Tenure, the next most important variable, accounts for about 6.6 percent of the residual variation. The influence of other variables is even smaller."*
> -- S.J. Maisel and L. Winnick (1960:139;152)

> *"Whereas simple ratios of housing cost to income seem sufficient as indicators, a sophisticated standard needs to incorporate considerations of age of the head of household and household size before an appropriate ratio standard should be applied. Otherwise appropriate variations in household behaviour will be ignored, all circumstances will be mistakenly judged by a single criterion, and estimates of deprivation or need will be in considerable error."*
> -- William C. Baer (1976:386-387)

> *"Several studies have shown that there is a relatively low correlation between income and the amount that families spend for shelter. In addition, families at the same income level spend widely varying amounts for housing."*
> -- Terry S. Lane (1977:iv)

There is no evidence that the ratio of housing expenditure-to-income is a valid and reliable measure of ability to pay rent. Researchers recognize that housing choice is a response to an extremely complex set of economic, social, and psychological impulses. "Given the variety of circumstances facing different households," Baer writes in his study of housing indicators, "rules of thumb about the percent of income to be devoted to housing can be extremely misleading in individual cases and therefore in aggregate data as well." He adds that "a maximum rent-income ratio for one kind of household may not be appropriate for another, and that imposing the same standard for all households is unrealistic" (Baer, 1976:383-384).

The pattern of household expenditures on housing is far too diverse to be explained by simple principles or averaged statistics about household budgets, though there have been attempts to do so. Nineteenth century social scientists failed in their attempt to discover "laws" that could be used to predict human behaviour. In the twentieth century the easy to use "rule of thumb" ratio about household expenditures on housing came into common usage during a period when there was inadequate conceptual and empirical understanding of how households obtain resources to meet their needs. Outside of the housing research community, it has become a part of the "conventional wisdom" about a household's ability to pay for housing. Over the past several decades, however, housing researchers have learned a great deal and both the nineteenth century "laws" and the twentieth century conventional wisdom about a "rule of thumb" ratio have

been dismissed as being based on theoretically and conceptually faulty premises. No empirical data supports the validity of any such "laws" or "rules." There are so many diverse ways in which households meet their basic needs that it is not possible to apply one general rule, or even a set of couple of related rules, to all households (see Hulchanski & Michalski 1994).

A fundamental conceptual problem with the housing expenditure-to-income ratio is the definition of "income" it relies upon. What is household "income"? What is meant by "income" in minimum income criteria? The ratio fails to be a valid measure of housing affordability because it relies on the easiest to measure income, money income. It ignores other sources of support, both cash and non-cash, by which households meet their needs. It is the *money* income, the *cash* resources which are easiest to measure and, as a result, the easiest to use as a convenient "rule of thumb" to measure ability to pay. This convenient measure, however, goes much too far in simplifying reality to the point that it does not reflect the reality of most households. Minimum income criteria fail to meet the tests of validity and reliability for a number of reasons. The inadequacy of the measure of the "income" used in the "income criteria" test is by itself solid ground for rejecting its use. The use of the very narrow definition of income as cash income from the formal market economy leads by definition to discrimination against households with limited cash income resources from the formal market economy, such as the unemployed, the underemployed and those in low-paying jobs. It favours those who have a great deal of cash income from this source.

Theory and empirical evidence both point to the fact that households meet their basic needs though a variety of methods. As the paper by Hulchanski and Michalski (1994) points out, there are five economic spheres by which households can obtain resources (cash and non-cash) for meeting their needs. These are: (1) *the domestic economy*, internal to the household; (2) *the informal economy*, the extended family and close acquaintances; (3) *the social economy*, neighbourhood and community-based groups and agencies; (4) *the market economy*, the formal marketplace; and
(5) *the state economy*, government. This typology is drawn from the vast body of theory and empirical evidence which indicates that households survive and even thrive in a complex intermingling of different economic spheres with their attendant webs of social relationships. When households find themselves in temporary situations of financial

duress, most have other options for substituting certain types of self-provisioning and non-cash exchanges. Indeed, the one general proposition that seems to emerge from the many studies of sources of social and economic support may be stated as follows: households rely upon an extensive network of socioeconomic relations to ensure that their basic needs are met, including but not limited to, market earnings (wages, interest, investments, etc.) and government transfer payments. (Hulchanski & Michalski, 1994).

In short, the inadequacy in the definition of income used in the housing expenditure-to-income ratio is itself enough to invalidate the use of minimum income criteria as a measure for predicting the ability to pay. The ratio is not a valid and reliable indicator of what it claims to measure. There is no evidence to support its use as a measure of ability to pay for housing. There is a great deal of evidence to the contrary -- evidence that many households are paying more, much more, than the prescribed ratio. The reality of how households manage to meet their needs, including the need to have the cash to pay their rent, is too complex and diverse to be summarized in one simple measure.

6. Selection of tenants who can afford to pay market rent

> *"Although lenders and rental agents use the rule of thumb to identify prospective borrowers and tenants who might not meet their monthly payments, there is limited evidence to support this practice. Defaults and foreclosures are most often associated with unstable incomes or occupations and unexpected family crises such as unemployment, exceptional medical bills or divorce. Calculation of the ratio of monthly payment to income ... will not necessarily predict such problems. It is certainly probable, however, that for any given family, some ratio of housing expenditures to income will be too burdensome, but it is not clear that the rule of thumb accurately approximates that cutoff point. Some households may be able to cover unusually high expenses, perhaps because they anticipate dramatic increases in income in the near future or because they choose to spend less on other items. Other families will find that allocating as much as 25 percent of their monthly incomes for housing is too difficult."*
>
> -- Terry S. Lane (1977:54)

Minimum income criteria are being used to select tenants. The use of *minimum* income criteria in the private rental housing market, unlike the use of *maximum* income criteria by the public sector (as discussed in section 3.3 above), is subject to a great deal

of controversy -- even to the extent of serious claims that it is a discriminatory practice. In 1993, for example, the Ontario Human Rights Commission estimated that active complaints related to discrimination in housing represent about eight percent of the Commission's total caseload. Many of the housing complaints are connected to the use of minimum income criteria by private sector landlords in evaluating prospective tenants. Many Ontario landlords in the public, non-profit and private sectors use household income as part of the criteria in selecting tenants.

> "When asked 'are there income requirements for your units,' nineteen (70%) reported that there are, six reported that there are not any (22%), and two did not respond. Of the nineteen corporations which do have income requirements, fourteen answered the follow-up question: 'What is the rent-to-income ratio that you require?' All but two are between 25% and 33%. The other two are 35% and 40%. Both the mean (the average) and the median rent to income ratio is 31%." (Hulchanski & Weir, 1992:2)

In contrast to this use of housing expenditure-to-income ratios as minimum income criteria, the aim of public sector housing regulations which use maximum income criteria is to assist disadvantaged households by imposing a means-test to determine eligibility. As pointed out in Section 3.3 above, the maximum income cutoffs effectively achieve the exclusion of higher income households. No harm results from excluding these households. In fact, to the extent that their taxes are paying for the means-tested housing subsidies, the aim is to help better target the subsidy dollars. In effect, this helps higher income households by using tax dollars more efficiently. The public sector's eligibility criteria, it should be noted, is based on a variety of discriminatory criteria. Households are separated into eligible and non-eligible groups by many rules and regulations. Income criteria, based on a housing expenditure-to-income ratio, provides but one of the measures.

Where is the evidence to support the use of a housing expenditure-to-income ratio in the selection of tenants so as to decrease the probability of default? After noting that "there is a relatively low correlation between income and the amount that families spend for shelter" and that "families at the same income level spend widely varying amounts for housing," Terry S. Lane, in his 1977 study *What Families Spend for Housing -- the*

Origins and Uses of the "Rules of Thumb," points out that there is "limited evidence to support this practice." In this study for the U.S. Department of Housing and Urban Development, Lane points out that even though "lenders and rental agents use the rule of thumb to identify prospective borrowers and tenants who might not meet their monthly payments," there are many other reasons why people, no matter what there income level, may default on their rent or mortgage payment. "Defaults and foreclosures," Lane points out, "are most often associated with unstable incomes or occupations and unexpected family crises such as unemployment, exceptional medical bills or divorce." He further notes that while it is "certainly probable that for any given family, some ratio of housing expenditures to income will be too burdensome," it is "not clear that the rule of thumb accurately approximates that cutoff point" (Lane, 1977:iv-v).

> "The use of the rule of thumb is, at present, justified primarily by tradition. What constitutes a 'normal' allocation of income for shelter is not well understood, and even less is known about the maximum housing expenditure a family can make without jeopardizing its ability to purchase other necessities." (Lane, 1977:v)

The conclusion reached by Lane was that "the rule [of thumb] is both inaccurate and inappropriately used" (Lane, 1977:iv). Lane's work was carried out as part of a larger project related to the use of ability to pay "rule of thumb" ratios. For the published results of this U.S. government sponsored research see: Feins & White (1977); Lane (1977); and Feins and Lane (1981). There is no reason to challenge these findings. There is no body of research even raising potential problems with the findings of the research by Lane, Feins and White.

It is not clear when the practice of using minimum income criteria in the residential rental market began. At its most fundamental level, the issue of using minimum income criteria in the private rental market (and in the "market rent" units in non-profit housing) relates to the differential treatment of groups in the marketplace using a "rule of thumb" measure based on the level of income: specifically, a lower than average level of income. Does having a lower than average level of income make the household more or less *reliable* in terms of paying rent than someone with a higher than average level of income? Is a lower than average level of income a valid and reliable indicator of a particular household's *ability* to pay? There is no evidence supporting

affirmative answers to these questions. There is plenty of evidence to the contrary. If the minimum income criteria, using a housing expenditure-to-income ratio of 30% for example, were valid and reliable measures of a household's ability to pay, some 830,000 renters and owners, 23% of Ontario's households, would be defaulting on their rent and mortgage payments. Even if a 50% ratio was deemed to be the "valid" measure, 332,000 households, 9% of Ontario households, would be defaulting on their rent and mortgage payments (1991 Census, see Table 1).

The use by entrepreneurs of a minimum income test on potential customers in a marketplace for one of the basic human necessities is quite rightly controversial. It is controversial in our free society because it relates to whether it is an acceptable practice for the private use of a arbitrarily selected "rule of thumb" to be the basis for making distinctions between groups of people. Individual households are not being assessed on the basis of individual characteristics but on their group characteristic -- as part of a very large group with the aggregate characteristic of having a lower than average level of cash income. This is using the category *lower than average household income* as a negative stereotype. All it effectively achieves is the identification of lower income households. Table 2 and Figure 3 provide 1992 data on the distribution of housing expenditure-to-income ratios in Ontario on the basis of income quintile. Very few (4.2%) of the middle

Figure 3

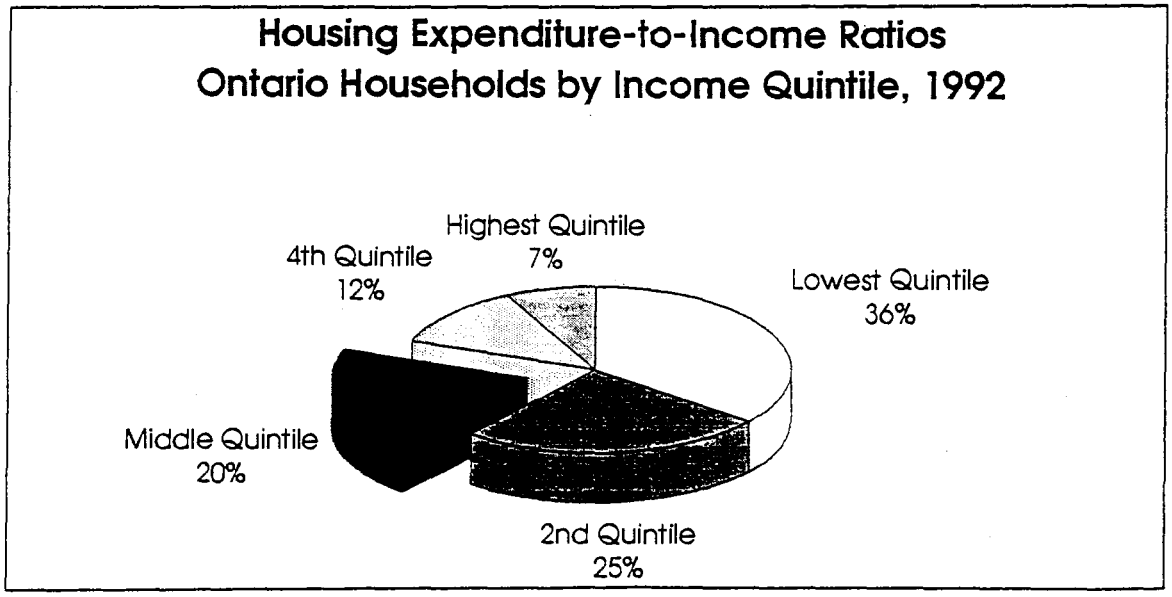

Table 2

Housing Expenditure-to-Income Ratios by Income Quintile

All Ontario Households, 1992

Quintile	under 20%	20 to 24.9%	25 to 29.9%	30 to 39.9%	40 to 49.9%	50 to 59.9%	60 to 69.9%	70% or more	Quintile Average	% over 30%	% over 50%
Lowest Quintile	11.6%	12.8%	9.3%	19.5%	14.2%	11.0%	5.9%	15.8%	35.7%	66.4%	32.7%
2nd Quintile	32.1%	25.2%	29.7%	17.4%	3.4%	0.7%	0.3%		25.4%	21.8%	1.0%
Middle Quintile	69.2%	18.6%	8.1%	4.2%					19.8%	4.2%	
4th Quintile	88.4%	8.3%	3.3%						11.8%		
Highest Quintile	100.0%								7.4%		
Ontario Average	43.8%	15.6%	10.6%	12.2%	5.9%	4.1%	2.2%	5.6%	100.0%	30.0%	11.9%

Source: Statistics Canada, Household Income and Facilities Survey, 1992.

income quintile pay over 30% of income on rent (Table 2). No households in the two highest income quintiles pay over 30%. A vast majority of the lowest income quintile (66.4%) and a significant proportion of the second lowest income quintile (21.8%) pay more than 30% of household income on housing. As might be expected, on average, the higher the income, the lower the housing expenditure-to-income ratio (Figure 3). Any statistical measure that is used to deny access to housing which is based on an expenditure-to-income ratio is simply discriminating against households with a lower than average income. By definition these households must pay a higher percentage of income on housing because their incomes are low and there is no such thing as good quality cheap housing. The ratio does not measure the ability to pay rent. It simply identifies lower than average income households who must spend a greater percentage of their income (cash resources) on housing than do above average income households.

All households make choices as to how to allocate not only their *cash* income but also their "total household resources," of which cash from the market is but one important part (Hulchanski & Michalski, 1994). In the case of the application of minimum income criteria in the decision to rent, however, an authority outside the household is imposing its determination of what it considers to be an "appropriate" budget allocation of the cash income of a particular household. Households with higher than average cash incomes can, of course, easily meet the minimum income criteria (as Tables 1 and 2, and Figure 3 demonstrate for Ontario's households). The "rule of thumb" measure is not being applied to them. Households with higher than average incomes are, by definition, automatically exempt from that potential constraint on exercising their freedom of choice in the marketplace. These households are also exempt from the potential constraint on their freedom of choice in deciding for themselves what is an appropriate household budget allocation of their cash resources. Households who fail to meet the minimum income criteria are automatically denied the ability to exercise their freedom of choice in the marketplace and their freedom of choice in allocating the cash portion of their total household resources.

Using housing expenditure-to-income ratios as minimum income criteria in the decision to rent to a particular household applies a statistical average of a specific group of households to an individual household. This is *statistical discrimination* (Thurow, 1975). Statistical discrimination is a specific form of discrimination which receives

special attention in literature on economic and marketplace discrimination, including the large body of literature on housing discrimination.

Economist George Galster (1992), in his recent extensive review of the literature on housing market discrimination, notes that a considerable amount of theoretical work has been carried out in the development of models which seek to explain why agents and landlords might discriminate in housing markets (Becker, 1957; Yinger, 1978, 1979, 1981, 1986; Galster, 1990a, 1990b; Newburger, 1989; Galster and Constantine, 1991). He divides these theories into a number of variants. One of them, the "inferior tenant" theory, is a form of statistical discrimination and is most pertinent to the use of minimum income criteria. The inferior tenant theory states that landlords exclude tenants from certain groups because of statistical discrimination; their experience indicates that group identity correlates with unstable rent payments, poor maintenance, severe damage, disruptive behaviours, and so on (Galster, 1992:653). This means that some landlords refuse to rent to certain tenants from certain groups because of *statistical discrimination* -- the belief that group identity correlates with being a bad tenant. There are, no doubt, "inferior tenants." The issue is whether all members of a particular group or groups should be excluded on the basis of some members of the group being "inferior." The "inferior" designation is based on prejudicial attitudes. The device used to exclude the "inferior" is minimum income criteria -- a presumption that statistical correlation is valid and that it applies to everyone in the group. It is difficult to determine the extent to which any statistics were ever systematically collect and analyzed, not that this is the issue. Research on housing discrimination, Galster points out, indicates that the dominant cause of housing discrimination is this type of stereotyped beliefs about the inferiority of certain groups (1992:654).

Statistical discrimination is a term used to describe the judgement of individuals based on averages instead of individual characteristics. Some alleged tendency of a group is applied to all members of that group. Economist Lester Thurow has written the following about statistical discrimination in the marketplace.

> "Although most types of discrimination (racial, sexual, religious, etc.) affect specific groups, statistical discrimination is a phenomenon that affects everyone. It occurs whenever an individual is judged on the basis of average characteristics

> of the group or groups, to which he or she belongs rather than upon his or her own personal characteristics. The judgements are correct, factual, and objective in the sense that the group actually has the characteristics that are ascribed to it, but the judgements are incorrect with respect to many individuals within the group." (Thurow, 1975:172)

Perhaps a certain higher percentage of households in receipt of social assistance, for example, has trouble paying their rent on time than some other group of households. The rejection of all households in receipt of social assistance constitutes statistical discrimination. The individual household is being judged, not on its own merits, but on a socially constructed group identity. This is a prejudicial attitude, a prejudgment, not a valid and reliable measure of the characteristics of the individual household. Statistical discrimination is simply a specific form of discrimination. According to Thurow: "Whenever statistical discrimination occurs, the linkage between individual characteristics and individual earnings [or other opportunities, such as renting a specific apartment] is broken.... Groups are objectively treated; individuals are not objectively treated" (1975:174).

When statistical discrimination is practised against groups who are already disadvantaged, it makes it even more difficult for members of that group to improve their status.

> "Statistical discrimination serves as a powerful conservative force. If a group starts with inferior background characteristics (for whatever reason), statistical discrimination will retard the group's acquisition of better background characteristics and will prevent individuals from escaping from discrimination on an individual basis." (Thurow, 1975:181)

This is why the application of measures based on the "average" characteristics of a group is so damaging when applied to an individual, and why it is not surprising to find such individuals claiming they are targets of discrimination. Discrimination in one market, such as housing discrimination, cannot be separated from discrimination in other markets, such as the job market. This point highlights the interlocking nature of different types of discrimination. Each type makes it easier to enforce other types.

The use of minimum income criteria in the decision to rent is a very simple, convenient, seemingly valid and easy to use "rule of thumb" for screening out individuals who happen to belong to groups identified as "inferior tenants" -- groups defined as such based on stereotypes and prejudice. It is more difficult and time consuming to assess each individual applicant on its own merits. A "rule of thumb" applied to all individual members of certain groups makes the process easier. The use of minimum income criteria in the rental housing market constitutes the use of an easy to use statistical measure to discriminate against many of the groups protected by human rights legislation. They are protected by legislation because many in society already consider them "inferior" people, not just "inferior" tenants. Black people, women, and single mothers, for example, earn proportionately less because of their colour, or gender or marital status. This is in part due to discrimination in the labour market. Taking this fact and using it against them in the rental housing market is simply adding to their disadvantaged situation.

Conclusion

Contemporary housing literature rarely situates itself in a broader historic context. The way in which social and economic "science" evolved affects some of the fundamental assumptions upon which housing analysis today is based. The source of a number of key assumptions found in contemporary housing theory and practice can be traced to past researchers and their approaches. The "rule of thumb" ratio of housing expenditure-to-income is one such assumption.

The three parts of this paper cover the nineteenth century origins, the twentieth century evolution, and the contemporary implications of the use of the housing expenditure-to-income ratio. The first part answered the questions: What is the origin of the use of a housing expenditure-to-income ratio? What, if any, are the theoretical and empirical foundations upon which the percentage of income "rules of thumb" are based? The history of attempts to study household consumption demonstrates that it is a history of a comedy of errors, all kinds of errors -- conceptual, theoretical, empirical and methodological -- in all kinds of combinations and permutations. In the 1930s Zimmerman's review of these attempts to establish "laws" about household consumption led him to conclude that "no absolute laws can be postulated" about the relation between income and housing. He wrote that "a series of so-called budgetary laws of rent such as the one by Schwabe, the rent law erroneously attributed to Engel, the revised rent law developed by the critics of the spurious law of Engel, and the several other alternative theories" all created a fog which "shrouds theories of the relation between rent and the standard of living" (Zimmerman, 1936:180).

Yet these housing "laws" and similar sorts of conjectures entered popular usage in the late nineteenth and early twentieth centuries in even further distilled and simplified forms. The second part of the paper traces how the use of these "rules" about the cost of housing evolved through the first half of this century. The major popular use which

emerged by the turn of the century was the adage "one week's wage for one month's rent" as a summary description of what housing should cost a household. This adage is similar to the late twentieth century adage about 25% or 30% of income representing the upper limit of a household's ability to afford housing. These adages are based on not much more than assumptions about the amount that average households tend to or ought to pay for housing without ever specifying which households are being averaged or how the normative "ought" statement was derived. What had occurred over the decades was the translation of some empirically-based observations of what some households were spending into assumptions about what they "ought" to be spending. The summary of all these observations and assumptions then took the easy-to-use format of a ratio of housing expenditures-to-income, which was increasingly referred to as the "rule of thumb" about the ability of households to pay for housing. A "rule of thumb" is, by definition, not based on science. It is a "method or procedure derived entirely from practice or experience, without any basis in scientific knowledge." (Oxford English Dictionary, 2nd edition, vol. XIV, p.232) Since the history of the attempts to define a housing expenditure-to-income ratio as a valid "law" or "rule" about household consumption is a history of failure, referring to it as a measure "without any basis in scientific knowledge" is very appropriate. The "rule of thumb" does not measure what its users claim it is measuring, whatever the percentage selected.

Based on an extensive review of the contemporary housing literature -- the literature which explicitly uses housing expenditure-to-income ratios -- six distinct uses are identified and assessed in part three of this paper. The assessment is based on the extent to which each is a valid and reliable measure of what it purports to measure. The six uses are: (1) *description* of household expenditures; (2) *analysis* of trends and comparison of different household types; (3) *administration* of public housing by defining eligibility criteria and subsidy levels in rent geared-to-income housing; (4) *definition* of housing need for public policy purposes; (5) *prediction* of the ability of a tenant household to pay market rent; and (6) *selection* of tenants who can afford to pay market rent. The ratio can be useful as a valid and reliable quantitative indicator in housing research and analysis (uses #1 and #2) depending on the nature of the research questions being asked and the methods being used. Contemporary housing researchers, however, in contrast to at least some housing practitioners, consider the use of a "rule of thumb" housing expenditure-to-income ratio as a misleading and invalid indicator of

either housing need or the ability to pay for housing (uses #4, #5 and #6). Use #3, administration of public housing by defining eligibility criteria and subsidy levels in rent geared-to-income housing, makes no claim and can make no claim to anything other than being a value-based policy decision -- a subjective judgement call which must be made in allocating means-tested subsidies.

Why did the specific ratio in use shift from 20% to 25% then to 30% over the course of this century (in uses #3 to #6)? The use of 25% and then 30% in Canada over the past few decades seems to be associated with public sector decisions relating to subsidized housing eligibility and rent levels. Yet this is not a satisfactory answer because it begs the question of why the public sector shifted the ratio it uses from 25% to 30%. The only possible answer to the question lies in the absolute lack of validity any ratio has as a universal measure or indicator of housing need and ability to pay. No ratio makes any empirical sense. Any ratio used is, therefore, simply arbitrary. All an arbitrary measure requires is for many people to uncritically agree to use it and not another measure. A scientific measure, however, must pass the tests of validity and reliability and does not depend upon the values or beliefs of individuals (i.e., it is not based on a popularity contest).

There is simply no escaping the fact that household consumption patterns and the means by which households meet their needs are as diverse as the individual humans and their life situations who comprise these households. The conclusion reached by University of Toronto professor Humphrey Carver nearly fifty years ago remains one of clearest explanations of the error in applying a statistical average to households based on their level of income.

> "It must be confessed that the attempt to reduce family needs to a classified budget is a denial of the manifold varieties of human nature. While the desire for security persuades us to accept the conventional standards of our community, the equally vigorous urge for freedom of individual expression makes us all resist such uniformities. The idiosyncrasies, vanities, pleasures, and generosities that make life worth living cannot be accounted for in scientific budgets and economic formulae. But even this cold examination of minimum family needs has shown the many variable factors that must enter into household plans; it is clear that simple generalizations and rules-of-thumb for calculating a family's capacity to pay for housing may be quite misleading." (Carver, 1948:86)

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